

















# CONCHOLOGIA ICONICA.

OR,

ILLUSTRATIONS

OF THE



## SHELLS OF MOLLUSCOUS ANIMALS.

VOL. X.

CONTAINING MONOGRAPHS OF THE GENERA

AMPULLARIA.  
CANCELLARIA.  
LITTORINA.  
SOLETTIELINA.

CAPSA.  
CAPSELLA.  
SANGUINOLARIA.  
PSAMMOBIA.  
PSAMMOTELLA.

MYTHUS.  
MODIOLA.  
LITHODOMUS.  
AVICULA.

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779

"And never, since the middle summer's spring,  
Met we on hill, in dale, forest, or mead,  
By paved fountain, or by rushy brook,  
Or on the beached margin of the sea,  
To dance our ringlets to the whistling wind,  
But with thy brawls thou hast disturbed our sport."

*Shakespeare.*

LONDON:

LOVELL REEVE, HENRIETTA STREET, COVENT GARDEN.

1853

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# AMPULLARIA.

## PLATE I.

### Genus AMPULLARIA, Lamarck.

*Testa globosa vel ovata, plus minus umbilicata, raro imperforata, epidermide crassiusculâ olivaceâ induta, spiræ suturâ modo simplici, modo canaliculatâ, anfractibus plus minus ventricosus, lævigatis; aperturâ subamplicâ, labro simplici. Operculum nunc corneum nunc calcareum, aperturam claudens.*

Shell globose or ovate, more or less umbilicated, rarely imperforated, covered with a rather thick olive epidermis, suture of the spire sometimes simple, sometimes channelled, whorls more or less ventricose, smooth; aperture rather large, lip simple. Operculum sometimes horny, sometimes calcareous, closing the aperture.

The sombre hue and obvious similarity of form, destitute of any indication of sculpture, of the shells of *Ampullaria*, have led to this genus being very much neglected by the collector; and their unattractive range of habitation, in swampy marshes, ponds, and rivers, has not been very inviting to the traveller. A few ardent naturalists, including among the foremost M. D'Orbigny and Mr. Bridges on the banks of the great rivers of Bolivia, Dr. Spix in Brazil, M. Caillaud in Africa, Mr. Yates and Mr. Wallace at the rivers Marañon and Amazon, MM. Sallé and Ghiesbrecht in Mexico, Mr. Dysou in Honduras, Mr. Benson in India, and Mr. Layard and Mr. Templeman in Ceylon, have directed their energies since Lamarck's time to *Ampullaria*-hunting; and the result is the following ample series of a hundred and thirty species, nearly two-thirds of which are new to science, and of which scarcely a dozen were known to the author of the 'Histoire des Animaux sans Vertèbres.' A monograph of the genus was published by Dr. Philippi in 1851, in M. Kuster's edition of the 'Conchylien Cabinet' of Chemnitz, but it is founded on very imperfect materials.

The species of *Ampullaria* are exceedingly well-defined, though bearing great general resemblance, and, what is not usual with molluscs affecting such habitats, many of them are stained at the aperture with brilliant colour. The animal, as is now sufficiently well known, is of an amphibious nature, possessing a double system of respiration, which adapts it to breathe either air or water, according to the requirements of the place of its habitation, which may be at one time flooded and at another dry. This peculiarity, observed originally by Mr. Guilding at the Caribbee Islands, was noticed first in detail by M.

Caillaud on his return from his expedition to the Nile. On placing some of his *Ampullaria* in a basin of water, M. Caillaud unexpectedly found many of his specimens come to life, and M. D'Orbigny discovered the existence of a distinct pulmonary apparatus.

So many new species of *Ampullaria* have been collected by recent travellers in comparatively few localities, that it is more than probable the genus abounds to a much larger extent than we have at present any idea of. It does not, however, exist in the great rivers of North America or of North-temperate Europe, and is peculiar to warm and tropical latitudes.

### Species 1. (Mus. Cuming.)

**AMPULLARIA CUPRINA.** *Amp. testâ subquadrato-globosâ, tenuiculâ, profundè angulato-umbilicatâ, spirâ obtusè emersâ, anfractibus superne latè planatis, ad angulum rotundatis, deinde plano-convexis; lutescente, rufofusco tinctâ et fasciatâ; aperturâ ovalâ, labro simplici.*

**THE COPPER AMPULLARIA.** Shell somewhat squarely globose, rather thin, deeply angularly umbilicated, spire obtusely exserted, whorls broadly flattened round the upper part, rounded at the angle, then flatly convex; yellowish, stained and banded with red-brown; aperture ovate, lip simple.

*Hab.* —?

A light, somewhat inflated species, with the whorls broadly rotundately angled round the upper part.

### Species 2. (Mus. Cuming.)

**AMPULLARIA SPIXII.** *Amp. testâ globoso-turbinatâ, subampliter umbilicatâ, spirâ subobtusâ, anfractibus rotundatis, lævibus, subangustis, superne declivibus; lutescente, fuscis intensè castaneis cingulatâ; aperturâ circulari-ovalâ, labro simplici.*

**SPIX'S AMPULLARIA.** Shell globosely turbinated, rather largely umbilicated, spire rather obtuse, whorls rounded, smooth, rather narrow, slanting round the upper part; yellowish, encircled with dark chestnut bands; aperture circular-ovate, lip simple.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 376. pl. 52. f. 7, 8.

*Hab.* River Parana, South America.



## AMPULLARIA.—PLATE I.

A fine turbinate species, of *Cyclostoma*-like growth, conspicuously banded and limited with dark chestnut upon a yellowish ground.

### Species 3. (Mus. Cuming.)

**AMPULLATIA GIGAS.** *Amp. testā ventricosoglobosā, matimā, angustē umbilicatā, spirā brevissimā, immersā, suturā angustē profundē canaliculatā, anfractibus convexis; virescente-olivaceā, fasciis angustis pallidē olivaceis cingulatā; aperturā oblongo-ovatā, fauce auran-  
tio-lutescente, cærulescente fasciatā, labro simplici, intus nigro-maculato.*

**THE GIANT AMPULLARIA.** Shell ventricosely globose, very large, narrowly umbilicated, spire very short, immersed, suture narrowly deeply channelled, whorls convex; greenish-olive, encircled with narrow faint-olive bands; aperture oblong-ovate, interior orange-yellow, blue-banded, lip simple, black spotted within.

SPIX, Testacea Fluvialia Brasiliensia, p. 1. pl. 1. f. 1.

*Hab.* Solomon's River, Brazil.

This truly fine species is quite remarkable for its bold ventricose growth and immersed channelled spire.

### Species 4. (Mus. Cuming.)

**AMPULLARIA CORNUCOPIA.** *Amp. testā oblongo-ovatā, obliquē productā, angustē umbilicatā, spirā brevi, subacuminatā, anfractibus rotundatis, lævibus, nitentibus, superne declivibus; livido-fuscescente, lineis fasciisque rufis angustis cingulatā; aperturā ovatā, subamplā, effusā.*

**THE CORNUCOPIA AMPULLARIA.** Shell oblong-ovate, ob-

- liquely produced, narrowly umbilicated, spire short, rather acuminate, whorls rounded, smooth, shining,
- slanting round the upper part; livid-brown, encircled, with narrow red bands and lines; aperture ovate, rather large, effused.

*Hab.* Columbia.

Of light substance, elegantly obliquely convoluted, with the aperture boldly effused.

### Species 5. (Mus. Cuming.)

**AMPULLARIA CRASSA.** *Amp. testā subquadrato-globosā, crassā, imperforatā, spirā breviusculā, obtusā, anfractibus convexis, lævibus, superne declivibus; sordidē lutescente, fasciis lineisque castaneis subdistantibus cingulatā; aperturā ovatā, labro columellari calloso, appresso, albo.*

**THE THICK AMPULLARIA.** Shell somewhat squarely globose, thick, imperforated, spire rather short, obtuse, whorls convex, smooth, slanting round the upper part; dull yellowish, encircled with rather distant chestnut bands and lines; aperture ovate, columellar lip callous, appressed, white.

SWAINSON, Zool. Illus. (First Series), vol. iii. pl. 101.

*Helix crassa*, Spix.

*Ampullaria Olivieri*, Deshayes.

*Helicina exumbilicata*, Spix.

*Ampullaria Brownii*, Jay.

*Hab.* Brazil.

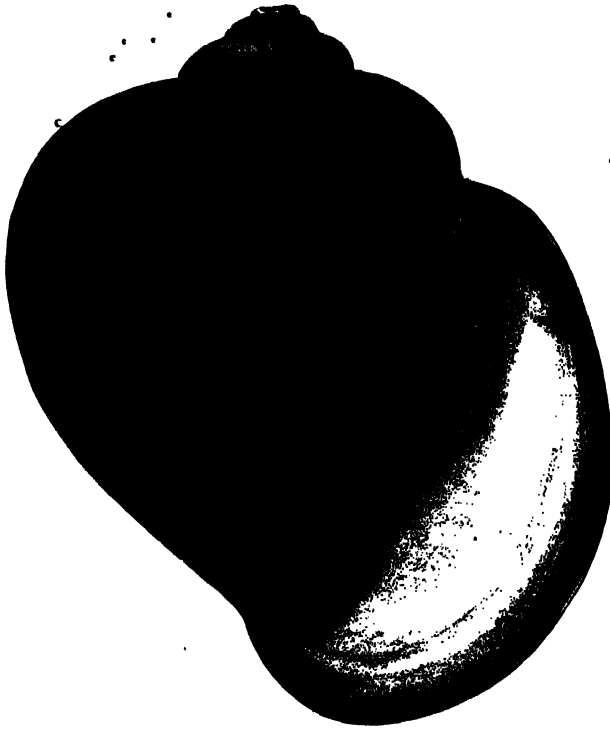
Chiefly distinguished by its white, callous columellar lip, which is appressed over the place of the umbilicus.



*Ampullaria, Pl*



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# AMPULLARIA.

## PLATE II.

### Species 6. (Mus. Cuming.)

AMPULLARIA FIGULINA. *Amp. testā ovatā, tenuiculā, spirā brevi, anfractibus convexis, ad suturam subdepressis, levibus; umbilico amplo; aperturā ovatā; pallidē olivaceo-cinereā, lineis fasciisque rufis cingulatā.*

THE CLAY AMPULLARIA. Shell ovate, rather thin, spire short, whorls convex, rather depressed at the suture, smooth; umbilicus large; aperture ovate; pale olive-ash, encircled with red lines and bands.

SPIX, Test. Fluv. Brasil. pl. 4. f. 4.

*Ampullaria lineata*, var., Spix.

Hab. Brazil.

Spix appears to have figured this species under the above name, and to have regarded it afterwards as a variety of his *A. lineata*. It is well distinguished by its light texture, largely umbilicated growth, and red-banded colouring upon a pale olive-ash ground.

### Species 7. (Mus. Cuming.)

AMPULLARIA RUFILINEATA. *Amp. testā ovatā, spirā subprominulā, anfractibus superne subdepressis, deinde convexis, levibus; umbilico oblecto; aperturā ovatā, labro columellari reflexo; albā, fulvo-spadiceā, lineis rufis variè cingulatā.*

THE RED-LINED AMPULLARIA. Shell ovate, spire rather prominent, whorls rather depressed at the upper part, then convex, smooth; umbilicus covered; aperture ovate, columellar lip reflected; white, fulvous-fawn, variously encircled with red lines.

Hab. — ?

Conspicuously encircled with red lines upon a fulvous-fawn ground, as in the preceding species, but distinguished by the absence of a visible umbilicus and by the more prominent convolution of the spire.

### Species 8. (Mus. Cuming.)

AMPULLARIA NOBILIS. *Amp. testā subpyriformi-globosā, spirā depressiusculā, anfractibus superne ventricosus, levibus; umbilico subprofundo; aperturā pyriformi-ovatā, peramplā; intensē olivaceā, extus corneā, obscure nigro fasciatā, labro intensē ustulato-rufo.*

THE NOBLE AMPULLARIA. Shell somewhat pyriformly globose, spire rather depressed, whorls ventricosose round the upper part, smooth; umbilicus rather deep; aperture pyriformly ovate, very large; dark olive, externally 'horny, obscurely black-banded, lip deep burnt red.

Hab. River Marañon; Mr. Yates.

This fine species, of a pyriformly globose shape, with a dark olive horny exterior, is painted within the lip with a peculiar deep-toned burnt red.

### Species 9. (Mus. Cuming.)

AMPULLARIA PALUDINOIDES. *Amp. testā globosā, spirā mediocri, anfractibus rotundatis, ad suturam subdepressis, levibus; umbilico suboblecto; sordidē olivaceā, labro flavicante.*

THE PALUDINA-LIKE AMPULLARIA. Shell globose, spire middling, whorls rounded, a little depressed at the suture, smooth; umbilicus nearly covered; dull olive, lip yellowish.

CHRISTOPORI and JAN, Mus. Berolin. Philippi in Küster, Conch. Cab. *Amp.* p. 27. pl. 7. f. 4.

Hab. — ?

Distinguished by its plump, rounded form and dark olive colour, the lip being coloured in a characteristic manner, with pale yellow.

### Species 10. (Mus. Cuming.)

AMPULLARIA CONICA. *Amp. testā subglobosā, spirā subprominulā, anfractibus convexis, levibus, nitentibus; umbilico oblecto; aperturā ovatā, labro vix reflexo; fulvo-olivaceā, labro allicante.*

THE CONICAL AMPULLARIA. Shell subglobose, spire rather prominent, whorls convex, smooth, shining; umbilicus covered; aperture ovate, lip scarcely reflected; fulvous olive, lip whitish.

WOOD,

Hab. — ?

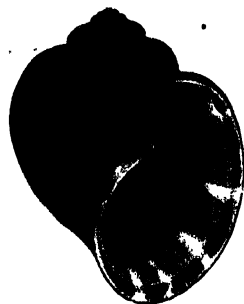
The spire has a more prominently convoluted aspect than in the preceding species, from the last whorl rather more than usually descending next the aperture. In colour the shell is of a lighter fulvous olive.







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# AMPULLARIA.

## PLATE III.

### Species 11. (Mus. Cuming.)

AMPULLARIA ADUSTA. *Amp. testā globoso-turbinatā, spirā mediocri, suturā canaliculatā, anfractibus rotundatis, levigatis; umbilico subamplo; aperturā ovatā; lutescente-viridi, fasciis saturatē olivaceis undique cingulatā.*

THE ADUST AMPULLARIA. Shell globosely turbinated, spire middling, suture channelled, whorls rounded, smooth; umbilicus rather large; aperture ovate; yellowish-green, encircled throughout with dark olive bands.

Hab. —?

A rich dark-banded species, with channelled suture, of globose form, probably from Borneo.

### Species 12. (Mus. Cuming.)

AMPULLARIA PILULA. *Amp. testā globosā, spirā brevi, subimmersā, anfractibus convexis, tumidis, supernè depressè rotundatis, levigatis; umbilico parviusculo; aperturā ovatā; lutescente-viridi, olivaceo fasciatā et nubeculatā.*

THE BALL AMPULLARIA. Shell globose, spire short, rather immersed whorls convex, swollen, depressly rounded at the upper part, smooth; umbilicus rather small; aperture ovate; yellowish-green, banded and clouded with olive.

Hab. Borneo.

Of the same typical character as the preceding species, rounder, with the spire shorter and slightly immersed.

### Species 13. (Mus. Cuming.)

AMPULLARIA MEGASTOMA. *Amp. testā globoso-ventricosā, Naticæformi, spirā plano-immersā, anfractibus convexis, tumidis, spiraliter obscurè funiculatis, rugosis; umbilico oblecto; aperturā peramplā, lunato-ovatā; intensè fusco-olivaceā, intus purpureo-fusca, lividā.*

THE LARGE-MOUTHED AMPULLARIA. Shell globosely ventricose, Natica-shaped, spire flatly immersed, whorls convex, swollen, spirally obscurely corded, rugose; umbilicus covered over; aperture very large,

lunar-ovate; dark brown-olive, interior purple-brown, livid.

SOWERBY, Tankerville Catalogue, App. p. 10.

*Ampullaria Neritoides*, D'Orbigny.

Hab. Mouth of the Rio Uruguay; D'Orbigny.

Distinguished from all other species of the genus by its remarkably expansive Natica-shaped growth and livid purple-brown interior.

### Species 14. (Mus. Cuming.)

AMPULLARIA SORDIDA. *Amp. testā globoso-turbinatā, spirā subprominulā, suturā canaliculatā, anfractibus rotundatis, supernè impressis, levigatis; umbilico profundo; aperturā ovatā, labro vix reflexo; rufo-olivaceā, labro castaneo.*

THE DULL AMPULLARIA. Shell globosely turbinated, spire rather prominent, suture channelled, whorls rounded, impressed at the upper part, smooth; umbilicus deep; aperture ovate, lip scarcely reflected; reddish-olive, lip chestnut.

SWAINSON, Zoological Illustrations, vol. iii. pl. 143.

Hab. Rio de la Plata.

Of regular rotundately turbinated growth, smooth, and chestnut-rust-coloured.

### Species 15. (Mus. Cuming.)

AMPULLARIA HONDURASENSIS. *Amp. testā ovatā, ventricosā, spirā breviusculā, acutā, anfractibus supernè plano-declivibus, deinde convexis, basin versus subattenuatis, corrugato-striatis; umbilico angusto; aperturā pyriformi-ovatā, labro subexpanso; cinereo-olivaceā, nilente, fasciis linearibus obscurè pictā.*

THE HONDURAS AMPULLARIA. Shell ovate, ventricose, spire rather short, sharp, whorls flatly slanting round the upper part, then convex, rather attenuated towards the base, wrinkle-striated; umbilicus narrow; aperture pyriformly ovate, lip rather expanded; ash-olive, shining, obscurely painted with linear bands.

Hab. Honduras; Dyson.

A neatly convoluted species of a peculiar shining livid ash-olive colour, obscurely painted with linear bands.









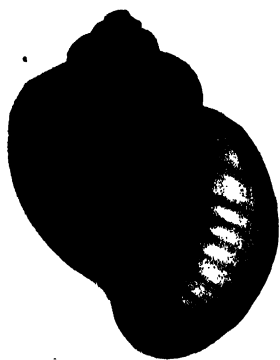
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Species 16. (Mus. Cuming.)

*AMPULLARIA AUTUMNALIS.* *Amp. testā turbinatā, spirā subprominulā, anfractibus rotundatis, ad suturam depressiusculis, obscure spiraliter funiculatis, funiculis irregularibus, interstitiis malleatis et striatis; umbilico subamplo; apertura rotundato-ovatā, labro subexpanso; olivaceā, castaneo-rufa tinctā.*

THE AUTUMNAL AMPULLARIA. Shell turbinated, spire rather prominent, whorls rounded, rather depressed at the suture, obscurely spirally corded, cords irregular, with the interstices malleated and striated; umbilicus rather large; aperture rotundately ovate, lip rather expanded; olive, stained with chestnut-red.

*Hab.* — ?

The whorls of this species are somewhat more than usually rounded, while they are concentrically sculptured with obscure cords, irregular and wrinkle-like in parts, with the interstices malleated and striated. The outer surface is partially covered on the olive ground with a deciduous chestnut-red coating.

Species 17. (Mus. Cuming.)

*AMPULLARIA VENETUS.* *Amp. testā globosā, subventricosā, spirā breviusculā, acutā, anfractibus superne declivibus, deinde convexis, undique malleatis et minutē crenulato-striatis; umbilico mediocri; apertura lunato-pyriformi, parviusculā, labro expanso; luteo-virescente, versus apicem pallidiorē, labro lutescente.*

THE SEA-GREEN AMPULLARIA. Shell globose, subventricose, spire rather short, sharp, whorls slanting round the upper part, then convex, everywhere malleated and minutely crenulately striated; umbilicus middling; aperture lunar-pyriform, rather small, lip expanded; yellowish-green, paler towards the apex, lip yellowish.

*Hab.* — ?

A pale sea-green species, with the surface rather largely malleated throughout and minutely crenulately striated, the lip and columella being of a rather conspicuous pale yellow tone.

Species 18. (Mus. Cuming.)

*AMPULLARIA URCEUS.* *Amp. testā globoso-turbinatā, solidiusculā, spirā brevi, plerumque plus minus erodā, anfractibus compressē rotundatis, ad suturam depressiusculis, irregulariter corrugato-liratis, et rugoso-reticulatis; umbilico amplo, profundo; apertura pyriformi, labio columellari reflexo; lutescente-albā, epidermide orasā carnē olivaceā indutā.*

THE PITCHER AMPULLARIA. Shell globosely turbinated, rather solid, spire short, generally more or less

eroded, whorls compressly rounded, a little depressed at the suture, irregularly wrinkle-ridged and rugosely reticulated; umbilicus large and deep; aperture pyriform, columellar lip reflected; yellowish-white, covered with a thick horny olive epidermis.

*Nerita urceus*, Müller, Hist. Verm. p. 174.

*Ampullaria urceus*, Deshayes.

*Ampullaria rugosa*, Lamarck.

An cadem. *Ampullaria dolium*, Philippi.

An testa junior. *Ampullaria leucostoma*, Swainson.

*Hab.* Trinidad; Cuttā.

This well-known species is at once recognized by its compressly rounded form and stout wrinkle-ridged horny epidermis, mostly eroded at the apex.

Species 19. (Mus. Cuming.)

*AMPULLARIA PUNCTIOLATA.* *Amp. testā subpyriformi-ovatā, ventricosā, spirā mediocri, anfractibus superne tumidis, versus basin attenuatis, lævigatis, sub lente punctulatis; umbilico angusto; apertura oblongo-ovatā, labro columellari reflexo; olivaceo-virescente, fasciis angustis viridibus obscure pictā, labro aurantio-rufa.*

THE PUNCTURED AMPULLARIA. Shell somewhat pyriformly ovate, ventricose, spire middling, whorls swollen round the upper part, attenuated towards the base, smooth, finely punctured beneath the lens; umbilicus narrow; aperture oblong-ovate, columellar lip reflected; olive-green, obscurely painted with narrow green bands, lip orange-red.

SWAINSON, Zoological Illustrations, vol. iii. p. 143.

*Hab.* — ?

Of a very characteristic pear-like ovate form, with a warm orange-red lip.

Species 20. (Fig. a, b, Mus. Cuming.)

*AMPULLARIA VEXILLUM.* *Amp. testā ovatā, tenuiculā, ventricosā, anfractibus convexis, superne subplanulatis, lævigatis, sub lente punctulatis; umbilico angusto; apertura pyriformi-ovatā, expansā, labro columellari reflexo; olivaceo-virescente, fasciis saturatē viridibus cingulatā, labro rufescente.*

THE FLAG AMPULLARIA. Shell ovate, rather thin, ventricose, whorls convex, rather flattened at the upper part, smooth, finely punctured beneath the lens; umbilicus narrow; aperture pyriformly ovate, expanded, columellar lip reflected; olive-green, encircled with dark green bands, lip tinged with red.

*Hab.* — ?

Very closely allied to the preceding species, but of a less pear-shaped form, with the whorls more flattened round the upper part.









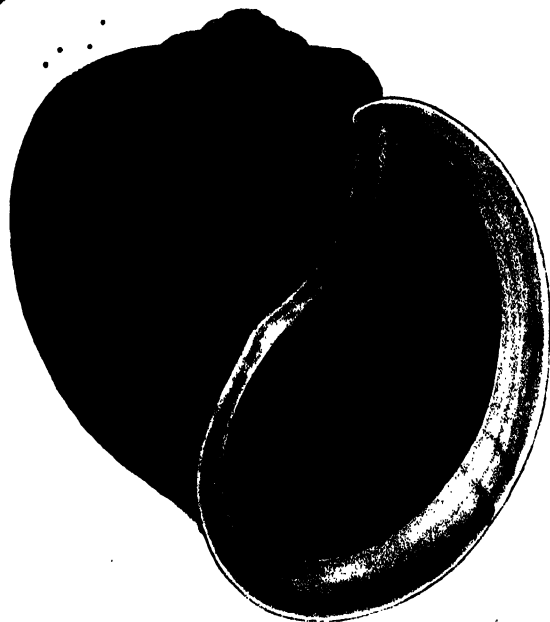




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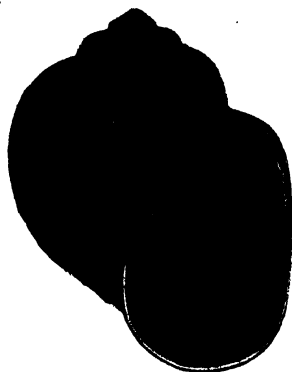
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# AMPULLARIA.

## PLATE VI.

### Species 26. (Mus. Cuming.)

AMPULLARIA LUZONICA. *Amp. testā globosā, tumidiusculā, tenui, anfractibus supernè plano-impressis, deinde rotundatis, levibus, longitudinaliter obsolete sulcatis; umbilico parvo; aperturā ovatā, subamplā; fulvescente-olivaceā, obscure fasciatā.*

THE LUZON AMPULLARIA. Shell globose, rather swollen, thin, whorls flatly impressed round the upper part, then rounded, smooth, longitudinally obsolete grooved; umbilicus small; aperture ovate, rather large; fulvous-olive, obscurely banded.

*Hab.* Calanang, Island of Luzon, Philippines; Cuming.

A light globosely turbinated shell, rather impressed next the suture, obscurely longitudinally grooved on the penultimate whorl.

*nigris inæquidistantibus cingulatā, labro intus rufo-aurantio tincto.*

YATES'S AMPULLARIA. Shell globose, spire short, but little exerted, whorls rather impressed round the upper part, then flatly convex, longitudinally irregularly striated; umbilicus rather narrow, deep; aperture pyriformly ovate, very large, lip reflected; fulvous-chestnut, encircled, at unequal distances with black lines, lip tinged within with reddish-orange.

*Hab.* River Marañon; Yates.

This interesting species is of a peculiar fulvous-chestnut colour, encircled at unequal distances with black lines. The aperture is unusually large, tinged next the lip with a warm reddish-orange.

### Fig. 29. (Mus. Cuming.)

The specimen here figured is the Ceylon form of *A. Luzonica*, represented above it at Fig. 26, from the Philippine Islands. It is rather more flatly impressed round the upper part of the whorls.

### Species 27. (Mus. Cuming.)

AMPULLARIA LAYARDI. *Amp. testā subcompressè globosā, anfractibus supernè angustè plano-impressis, deinde rotundatis, levibus, nitentibus; umbilico parvo, contracto; aperturā ovatā; albidā, epidermide corneā olivaceā indutā.* \*

LAYARD'S AMPULLARIA. Shell rather compressly globose, whorls narrowly flatly impressed round the upper part, then rounded, smooth, shining; umbilicus small, contracted; aperture ovate; whitish, covered with an olive horny epidermis.

*Hab.* Colombo, Ceylon; Layard, Templeman.

Of a more compressly globose form than the preceding species, with a conspicuous horny epidermis.

### Species 30. (Mus. Cuming.)

AMPULLARIA PORPHYROSTOMA. *Amp. testā oblongo-globosā, spirā subprominulā, anfractibus supernè declivibus, deinde convexis, levibus, nitentibus; umbilico subangusto, profundo; aperturā ovalā, subeffusā; cinereo-olivaceā, obscure multifasciatā, aperturā nigricante.*

THE PURPLE-MOUTH AMPULLARIA. Shell oblong-globose, spire rather prominent, whorls slanting round the upper part, then convex, smooth, shining; umbilicus rather narrow, deep; aperture ovate, rather effused; ash-olive, faintly many-banded, aperture rather blackish.

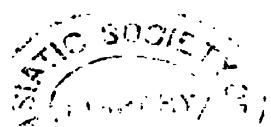
*Hab.* — ?

Of a rather oblong turbinated form, and shining ash-olive hue, the whorls being gently slanted next the suture.

### Species 28. (Mus. Cuming.)

AMPULLARIA YATESII. *Amp. testā globosā, spirā brevi, parum exertā, anfractibus supernè subimpressis, deinde plano-convexis, longitudinaliter irregulariter striatis; umbilico subangusto, profundo; aperturā pyriformi-ovatā, peramplā, labro reflexo; fulvo-castaneā, lineis*



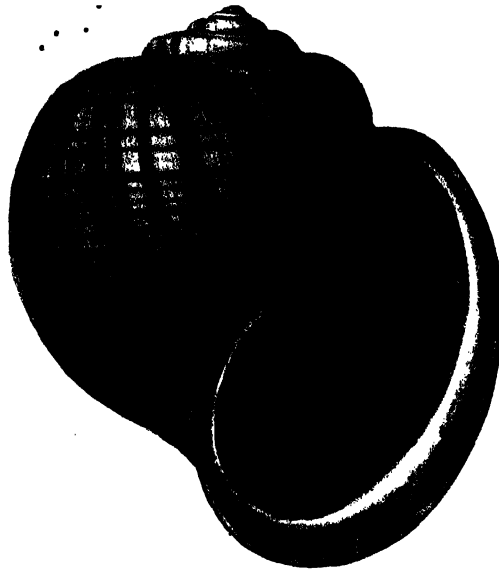




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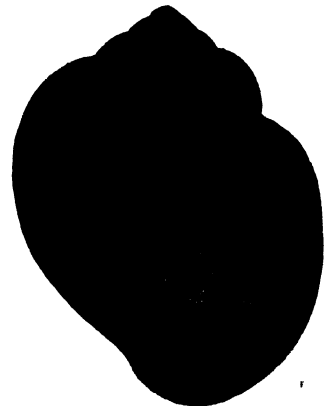
32.



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34.



35.

# AMPULLARIA.

## PLATE VII.

### Species 31. (Mus. Cuming.)

AMPULLARIA FLATILIS. *Amp. testā vix umbilicatā, globosā, tumidā, spirā breviusculā, anfractibus convexis, levibus, longitudinaliter striato-scalptis; virescente-olivaceā, angustā fasciatā; aperturā pyriformi-ovatā, labro columellari subreflexo, flavescēte.*

THE BLOWN AMPULLARIA. Shell scarcely umbilicated, globose, tumid, spire rather short, whorls convex, smooth, longitudinally striately scratched; greenish-olive, narrowly banded; aperture pyriformly ovate, columellar lip slightly reflected, yellowish.

Hab. Tabasco, Mexico.

Allied to *A. livescens*, but obviously distinct in form, more rounded, with the spire less exerted, and more contracted at the umbilicus.

### Species 32. (Mus. Cuming.)

AMPULLARIA MALLEATA. *Amp. testā globosā, tumidā, vix umbilicatā, spirā subacuminatā, anfractibus convexis, undique conspicuē malleatis; livido-olivaceā; aperturā pyriformi-ovatā, labro subeffuso, intus flavescēte.*

THE HAMMERED AMPULLARIA. Shell globose, tumid, scarcely umbilicated, spire rather acuminate, whorls convex, everywhere conspicuously malleated; livid olive; aperture pyriformly ovate, lip rather effused, yellowish within.

JONAS, Moll. Beitr. p. 22. pl. 10. f. 11.

*Ampullaria reflexa*, var., Philippi.

Hab. Mexico.

This species is clearly not a variety of *A. reflexa*. Although the malleated surface predominates in a manner to render it a distinguishing character, the shell is distinguished otherwise by peculiarities of form.

### Species 33. (Mus. Cuming.)

AMPULLARIA SPECIOSA. *Amp. testā globosā, profundē umbilicatā, spirā breviusculā, subimmersā, anfractibus ad suturam canaliculatis, deinde convexis; glaucā, lineato-fasciatā, epidermide olivaceā cornē indutā; aperturā pyriformi-oblongā, peramplā, labro intus intensē miniato.*

THE HANDSOME AMPULLARIA. Shell globose, deeply umbilicated, spire rather short, somewhat immersed,

whorls channelled at the suture, then convex; glaucous, banded with lines, covered with an olive horny epidermis; aperture pyriformly oblong, very large, lip deep vermilion within.

PHILIPPI, Zeitschrift für Malac. 1849, p. 18. Kuster, Conch. Cab. *Amp.* p. 40. pl. 11. f. 2.

Hab. Zanzibar.

A fine glaucous species, covered with a rather thin olive-horny epidermis, deep vermilion-stained within the lip, convoluted nearly on a vertical plane.

### Species 34. (Mus. Cuming.)

AMPULLARIA HEMASTOMA. *Amp. testā globosā, solidiusculā, subprofundē umbilicatā, spirā brevi, obtusā, anfractibus supernē planulatis, deinde convexis, undique peculiariter corrugato-malleatis; lividē olivaceo-nigrā; aperturā lunato-oblongā, labro intus intensē sanguineo.*

THE BLOOD-MOUTHED AMPULLARIA. Shell globose, rather solid, rather deeply umbilicated, spire short, obtuse, whorls rather flat at the upper part, then convex, everywhere peculiarly wrinkle-malleated; livid olive-black; aperture lunar-oblong, lip deep blood-red within.

Hab. Peru.

Of an intense dark livid colour, almost black, with the surface peculiarly wrinkle-malleated, and the lip stained within with deep blood-red.

### Species 35. (Mus. Cuming.)

AMPULLARIA POLITA. *Amp. testā oblongo-globosā, subglandiformi, subimperfocatā, spirā vix acuminatā, anfractibus convexis, peculiariter nitentibus, olivaceo-virente; aperturā pyriformi, subangustā.*

THE POLISHED AMPULLARIA. Shell oblong-globose, somewhat acorn-shaped, almost imperforated, spire slightly acuminate, whorls convex, peculiarly shining; olive-green; aperture pyriform, rather narrow.

DESHAYES, Encyclopédie Méthodique, Vers, vol. ii. p. 51.

Eadem. *Ampullaria virescens*, Deshayes.

Hab. Port Jackson, Australia.

Of an oblong-globose glandiform shape, with a peculiar dark, shining, olive-green surface.



1000 Society  
1000 Society





38.



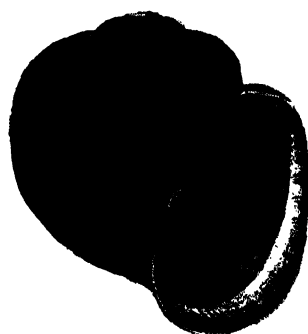
37.



33.



39.



40.

# AMPULLARIA.

## PLATE VIII.

### Fig. 36. (Mus. Cuming.)

The shell here figured proves to be a variety, of finer growth, of *A. pilula*, represented at Pl. III. Fig. 12.

### Species 37. (Mus. Cuming.)

AMPULLARIA TURBINOIDES. *Amp. testā oblongo-turbinatā, solidiusculā, subimperfōratā, spirā exsertā, anfractibus convexis, lævibus; olivaceo-virente, obscure fasciatā; aperturā ovatā, parviusculā, labro columellari reflexo.*

THE TURBO-LIKE AMPULLARIA. Shell oblong-turbinated, rather solid, almost imperforated, spire exserted, whorls convex, smooth; olive-green, obscurely banded; aperture ovate, rather small, columellar lip reflected.

*Hab.* Australia.

A dull smooth olive-green species, faintly banded, of a Turbo-like growth.

### Species 38. (Mus. Cuming.)

AMPULLARIA OLIVACEA. *Amp. testā suboblongo-globosā, vix umbilicatā, spirā mediocri, anfractibus ad suturam canaliculatis, deinde convexis, longitudinaliter corrugato-striatis; virente-olivaceā; aperturā lunato-oblongā, subamplā, labro intus aurantio-rufo.*

THE OLIVE AMPULLARIA. Shell somewhat oblong-globose, scarcely umbilicated, spire moderate, whorls slightly channelled at the suture, then convex, longitudinally corrugately striated; greenish-olive; aper-

ture lunar-oblong, rather large, lip tinged with orange-red within.

*SPIX*, Test. Fluv. Brasiliensis, pl. 8. f. 1.

*Hab.* —?

Allied to *A. urceus*, but less roughly wrinkled, and of a lighter olive-horn colour, tinged in the mouth with a warm orange-red.

### Species 39. (Mus. Cuming.)

AMPULLARIA LYMNÆIFORMIS. *Amp. testā compressē ovatā, subtus excavatā, subampliter umbilicatā, spirā subimmersā, anfractibus superne planulatis, deinde plano-convexis; sordidē glaucā, fasciis quatuor fuscis, distantibus angustis cingulatā; aperturā ovatā, latē expansā.*

THE LYMNÆA-SHAPED AMPULLARIA. Shell compressly ovate, hollowed beneath, rather largely umbilicated, spire slightly immersed, whorls flattened round the top, then flatly convex; dull glaucous, encircled with four distant narrow brown bands; aperture ovate, largely expanded.

*Hab.* River Marañon.

This fine species is distinguished by its elegantly convoluted *Lymanæa*-like form, and largely expanded aperture.

### Fig. 40. (Mus. Cuming.)

This shell, though differing so much in appearance from *A. Layardi*, represented at Pl. VI. Fig. 27, is identical with it, and illustrates an example of the same species with the surface malleated.



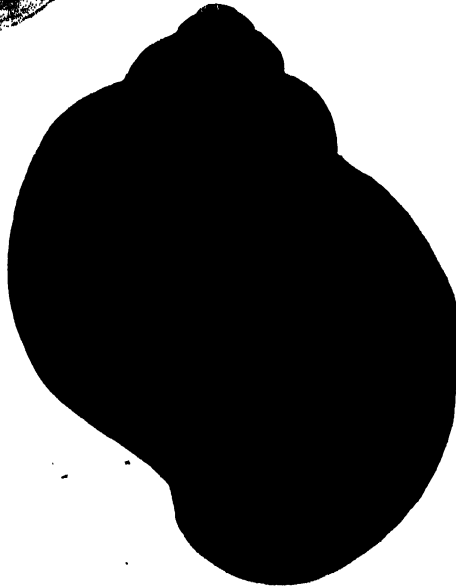
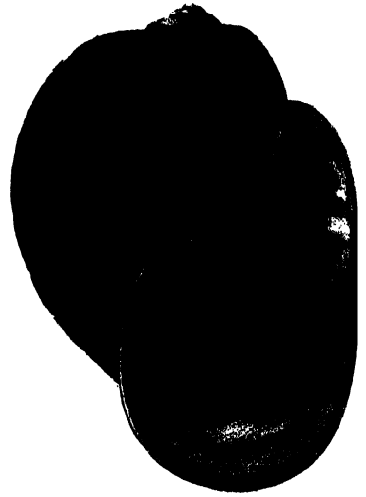




11.



12.



13.

# AMPULLARIA.

## PLATE IX.

### Species 41. (Mus. Cuming.)

AMPULLARIA FASCIATA. *Amp. testā ovato-globosā, tenui, inflatā, umbilicatā, spirā parviusculā, subimmersā, anfractibus ad suturam impressē canaliculatis, deinde rotundatis, malleatis, nitentibus; livido-glaucā, fasciis angustis rufescente-glaucis cingulatā; aperturā ovatā, subamplā.*

THE Banded AMPULLARIA. Shell ovately globose, thin, inflated, umbilicated, spire rather small, slightly immersed, whorls impressly channelled at the suture, then rounded, malleated, shining; livid glaucous, encircled with narrow reddish-glaucous bands; aperture ovate, rather large.

Hab. — ?

A very characteristic elegantly convoluted species, deeply impressed at the suture and conspicuously umbilicated, of light texture and pale glaucous colour, encircled with darker reddish-glaucous bands.

We select this out of the many that have been described and figured by authors under the name of *A. fasciata*, trusting it may henceforth be regarded as the fixed type of that species.

(Fig. 42 and 43, Mus. Cuming.)

AMPULLARIA INSULARUM. *Amp. testā ovato-globosā, tenuiculā, inflatā, angustē profundē umbilicatā, spirā brevissimā, immersā, anfractibus ad suturam impressē canaliculatis, deinde convexis, undique densē reticulato-striatis; olivaceo-virente, pallidē fasciatā; aperturā circulari-ovatā, labro integro, intus rufo-aurantio tincto.*

THE ISLAND AMPULLARIA. Shell ovately globose, rather thin, inflated, narrowly deeply umbilicated, spire very

short, immersed, whorls impressly channelled at the suture, then convex, everywhere closely reticulately striated; olive-green, faintly banded; aperture circular-ovate, lip entire, tinged with reddish-orange.

D'ORBIGNY, Voy. dans l'Amér. Mérid. Moll. p. 374. pl. 51. f. 1, 2.

Hab. Isles of Parana; D'Orbigny. Rio Grande, Bolivia; Bridges.

The shells represented at Fig. 42 and 43 illustrate two different states of this species; one in which the surface is finely indently striated, the other in which it is also ridged and malleated. The suture is deeply impressed and the aperture nearly circular and warmly tinged with orange. M. D'Orbigny describes having found specimens among the water-plants in the lakes and brooks of the Isles of Parana, La Plata, which he kept alive for a twelve-month afterwards without water.

### Species 44. (Mus. Cuming.)

AMPULLARIA PAPIRACEA. *Amp. testā globoso-turbinatā, tenuissimā, imperforatā, spirā exertā, obsolete spirāliter liratā, anfractibus conchosis, levibus, nitentibus, undique intense rufo-nigrā; aperturā pyriformi-oblongā, labro columellari tenuē reflexo.*

THE PAPER AMPULLARIA. Shell globosely turbinated, very thin, imperforated, spire exerted, obsolete spirally ridged, whorls convex, smooth, shining, everywhere intense red-black; aperture pyriformly oblong, columellar lip thinly reflected.

SPILL, Test. Fluv. Brasiliensis, p. 8. pl. 4. f. 1, 2.

Hab. Maranhão, Western Brazil.

by its peculiarly light horny tenebrous colour.

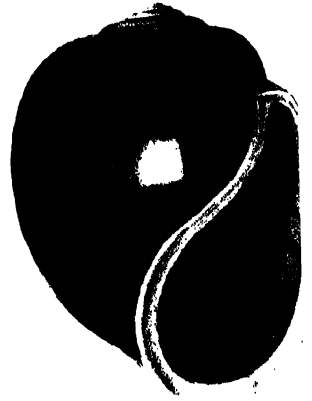
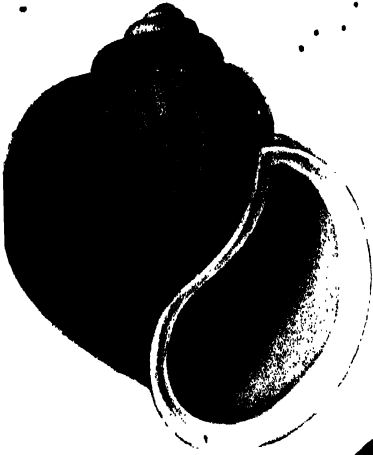




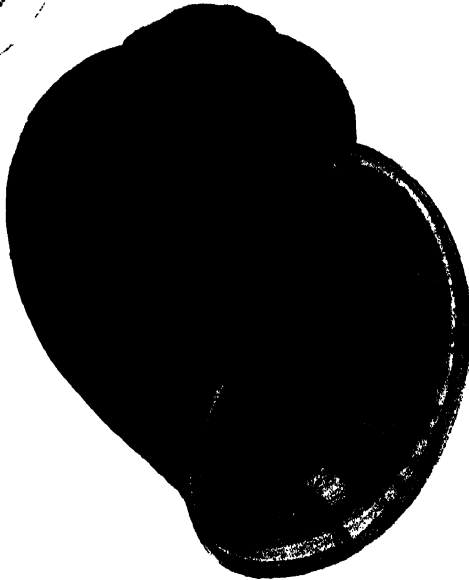




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# AMPULLARIA.

## PLATE X.

Species 45. (Mus. Cuming.)

AMPULLARIA ORONOCENSIS. *Amp. testâ globosâ, aperturâ perspectivè umbilicatâ, spirâ breviusculâ, anfractibus superne impresso-planis, deinde rotundatis; intense olivaceo-virentes, fasciis angustis nigris cingulatâ; aperturâ pyriformi-ovatâ, labro intus intense aurantio-sanguineo.*

THE ORONOCO AMPULLARIA. Shell globose, largely perspective unumbilicated, spire rather short, whorls impressly flattened at the upper part, then rounded; dark olive-green, encircled with narrow black bands; aperture pyriformly ovate; lip deep orange, blood-red within.

ZIEGLER, Mus. Cuming.

Hab. River Oronoco.

Of very characteristic helicoid growth, forming a large perspective umbilicus, distinguished by its vivid colouring. The outer surface of the shell is painted with narrow black bands upon a rich olive-green ground, whilst the aperture is stained with blood-red passing into orange.

Species 46. (Fig. 46 and 47, Mus. Cuming.)

AMPULLARIA GLOBOSA. *Amp. testâ rotundato-globosâ, angustè profundè umbilicatâ, spirâ brevi, obtusâ, interdum subexsertâ, anfractibus rotundatis, lævibus, nitentibus, plus minus malleatis; lutescente-olivaceâ, vix fasciatis; aperturâ lunato-oblongâ, amplâ, labro incrassato, flavescente.*

THE GLOBOSE AMPULLARIA. Shell rotundately globose, narrowly deeply umbilicated, spire short, obtuse, sometimes a little exserted, whorls rounded, smooth, shining, more or less malleated; yellowish-olive, scarcely banded; aperture lunar oblong, large, lip thickened, yellowish.

SWAINSON, Zool. Illus. First Series, Pl. 119.

Eadem var. *Ampullaria corrugata*, Swainson.

*Ampullaria pachystoma*, Benson.

Hab. Calcutta (in the Botanic Gardens); Benson.

Peculiarly distinguished by its shining, olive, malleated, globular form and thickened peritreme. The specimens being more or less smooth or wrinkled, with Fig. 46 and 47, represent the extreme states of the species, the spire more or less acuminate and the umbilicus larger or smaller.

Species 48. (Mus. Cuming.)

AMPULLARIA AMPULLACEA. *Amp. testâ pyriformi-globosâ, basin versus attenuatâ, angustè compressè umbilicatâ, spirâ brevi, obtusâ, anfractibus superne declivibus, deinde plano-convexis, lævibus; castaneo-olivaceâ, fasciis angustis numerosis cingulatâ; aperturâ pyriformi-oblongâ, amplâ, labro intus aurantio-rufopius minus tincto.*

THE JUG AMPULLARIA. Shell pyriformly globose, attenuated towards the base, narrowly compressly umbilicated, spire short, obtuse, whorls slanting round the upper part, then slightly convex, smooth; chestnut-olive, encircled with numerous narrow bands; aperture pyriformly oblong, large, lip more or less tinged within with orange-red.

*Helix ampullacea*, Linnæus, Syst. Nat. p. 1244.

*Nerita ampullacea*, Müller.

*Ampullaria fasciata*, Lamarck.

*Bulinus ampullaceus*, Bruguière.

*Ampullaria ampullacea*, Férussac.

*Ampullaria magnifica*, Dunker.

*Ampullaria Sumatrensis*, Philippi.

*Ampullaria Celebensis*, Quoy and Gaimard.

Hab. Borneo.

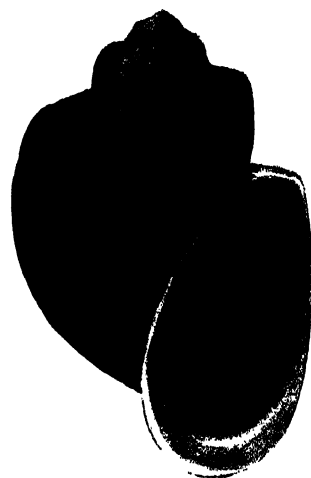
This appears to be the old Linnean type of the genus so far as it is possible to determine it. The shell is chiefly distinguished by a characteristic globosely pear-shaped form.



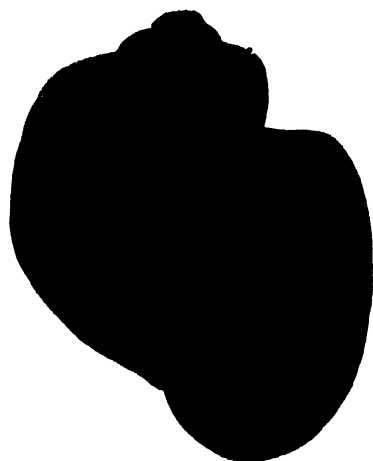




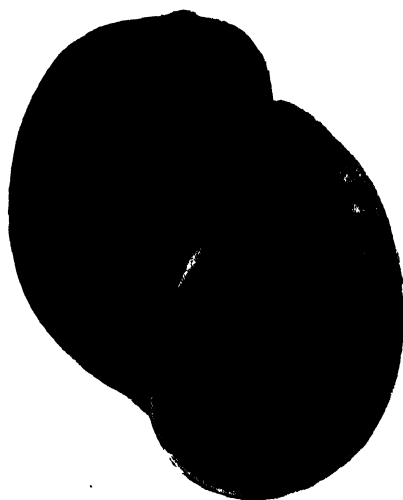
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# AMPULLARIA.

## PLATE XI.

### Species 49. (Mus. Cuming.)

AMPULLARIA DYSONI. *Amp. testā globosā, profundē umbilicatā, spirā acuminatā, anfractibus supernē declivibus, deinde tumido-rotundatis, conspicuē malleatis; livido-griseā, ferrugineo tinctā; aperturā pyriformi-oblongā, fauce livido-purpureā.*

DYSON'S AMPULLARIA. Shell globose, deeply umbilicated, spire acuminate, whorls slanting at the upper part, then tumidly rounded, conspicuously malleated; livid grey, tinged with rust; aperture pyriformly oblong, livid purple within.

HANLEY, Conch. Miscellany, No. 1. Pl. 2. Fig. 7.

Hab. Honduras; Dyson.

This species scarcely differs from *A. malleata*, except in being more umbilicated and more globosely acuminate towards the spire.

### Species 50. (Fig. 50 and 51, Mus. Cuming.)

AMPULLARIA BRIDGESII. *Amp. testā oblongā, tenui, subprofundē umbilicatā, spirā turritā, anfractibus supernē latē plano-angulatis, deinde convexis, levibus, submalleatis; virente-olivaceā, interdum sordidē olivaceo-brunneā, fasciis angustis numerosis cingulatā; aperturā ovato-oblongā, labro effuso.*

BRIDGES'S AMPULLARIA. Shell oblong, thin, rather

deeply umbilicated, spire turreted, whorls broadly flatly angled at the upper part, then convex, smooth, faintly malleated; greenish-olive, sometimes dusky olive-brown, encircled with numerous narrow bands; aperture ovately oblong, lip effused.

Hab. Rio Grande, Bolivia; Bridges.

This fine species, collected in the interior of Bolivia by Mr. Bridges, is remarkably distinguished by the broad spiral shelf which is formed by the angular structure of the upper part of the whorls next the suture.

### Species 52. (Mus. Cuming.)

AMPULLARIA IMMERSA. *Amp. testā ovata, tenui, ventricosā, spirā brevi, peculiariter immersā, anfractibus ad suturam profundē canaliculatis, deinde convexis, levibus; virescente-olivaceā, vix spiram pallidā, fasciis angustis cingulatā; aperturā ovatā, labro subeffuso.*

THE IMMERSED AMPULLARIA. Shell ovate, thin, ventricose, spire short, peculiarly immersed, whorls deeply channelled at the suture, then convex, smooth; greenish-olive, pale towards the spire, encircled with narrow bands; aperture ovate, lip rather effused.

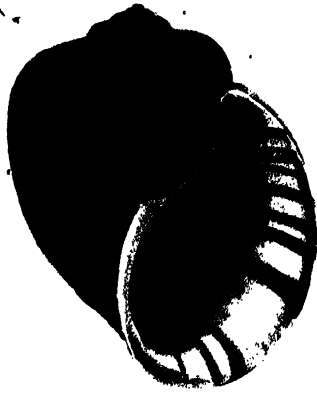
Hab. Rio Grande, Bolivia; Bridges.

A light ventricose species, deeply channelled at the suture, with the spire peculiarly rudely immersed.





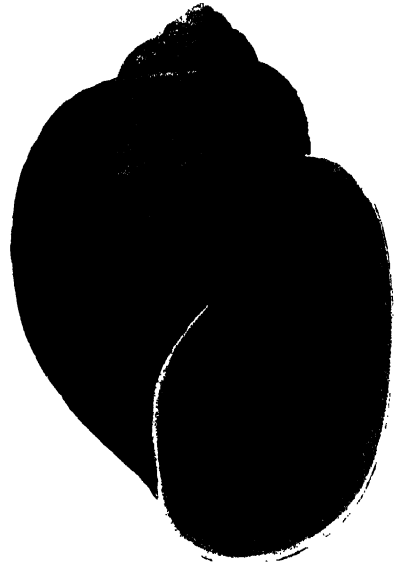




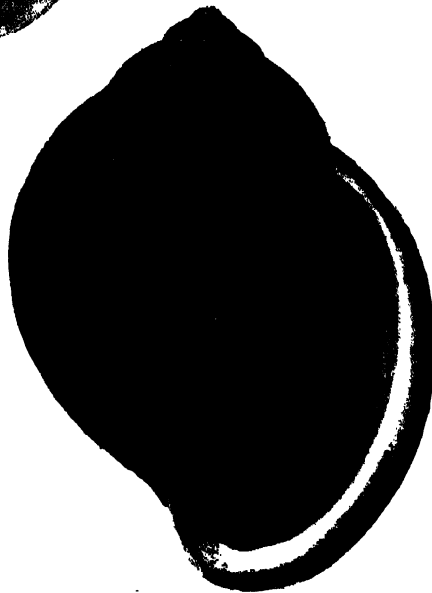
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34.



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36.

# AMPULLARIA.

## PLATE XII.

### Species 53. (Mus. Cuming.)

AMPULLARIA ZONATA. *Amp. testā subquadrato-ovatā, tenuiculā, inflatā, angustā profundē umbilicatā, spirā brevi, acuminatā, anfractibus superne latē rotundatis, ultimo basin versus attenuatō; luteo-olivaceā, lineis rufis, nigricantibus, et viridibus promiscuē cingulatā; aperturā ovatā, ampliter effusā, fauce aurantio-luteā.*

THE ZONED AMPULLARIA. Shell somewhat squarely ovate, rather thin, inflated, narrowly deeply umbilicated, spire short, acuminate, whorls broadly rounded at the upper part, the last whorl attenuated towards the base; yellowish-olive, promiscuously encircled with red, black, and green lines; aperture ovate, largely effused, interior orange-yellow.

SPIX, Test. Fluv. Brasiliensis, p. 1. pl. 2. f. 1, 2.

Hab. Columbia.

The shell here figured, the only specimen we have been able to refer to *A. zonata*, corresponds with the variety figured by Dr. Spix with the name *A. Archimedes*.

### Species 54. (Mus. Cuming.)

AMPULLARIA VERMIFORMIS. *Amp. testā globoso-turbinatā, subampliter umbilicatā, spirā mediocri, anfractibus ad suturam impressē canaliculatis, deinde rotundatis, emrudē striatis; lutescente-olivaceā, fasciis viridentibus angustis cingulatā; aperturā circulari-ovatā, fauce aurantio tinctā.*

THE VERMIFORM AMPULLARIA. Shell globosely turbinated, rather largely umbilicated, spire middling, whorls impressly channelled at the suture, then rounded, rather roughly striated; yellowish-olive, encircled with narrow faint green bands; aperture circular-ovate, interior tinged with orange.

Hab. Paraguay.

Distinguished from *A. insularum*, to which it is closely allied, by its more spirally turbinated growth, larger umbilicus, and painting of narrow green bands.

### Species 55. (Mus. Cuming.)

AMPULLARIA AMAZONICA. *Amp. testā oblongo-ovatā, subangustā profundē umbilicatā, spirā exsertā, anfractibus ad suturam impressis, deinde convexis, longitudinaliter striatis; virescente-olivaceā, obscure fasciatā; aperturā pyriformi-oblongā, fauce aurantio tinctā.*

THE AMAZON AMPULLARIA. Shell oblong-ovate, rather narrowly deeply umbilicated, spire exserted, whorls impressed at the suture, then convex, longitudinally striated; greenish-olive, obscurely banded; aperture pyriformly oblong, interior tinged with orange.

Hab. River Amazon.

Closely resembling Mr. Swainson's drawing of *A. reflexa*, but of larger size and differently coloured in the mouth.

### Species 56. (Mus. Cuming.)

AMPULLARIA CASSIDIFORMI. *Amp. testā oblongā, versus basin attenuatā, subangustā profundē umbilicatā, spirā breviusculā, conoidē, anfractibus superne tumido-declivibus, deinde plano-convexis; lutescente-viridi, nigricante obscure fasciatā; aperturā pyriformi-oblongā, fauce livido-purpureā, labro columellari interdum sanguineo tincto.*

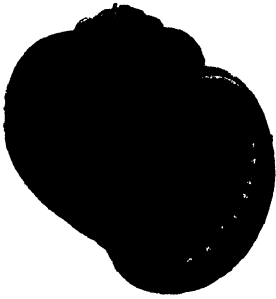
THE CASSIS-SHAPED AMPULLARIA. Shell oblong, attenuated towards the base, rather narrowly deeply umbilicated, spire rather short, conoid, whorls tumidly slanting at the upper part, then flatly convex; yellowish-green, obscurely banded with blackish-brown; aperture pyriformly oblong, interior livid purple, columellar lip sometimes tinged with blood-red.

Hab. Lake of Maracaibo, Venezuela.

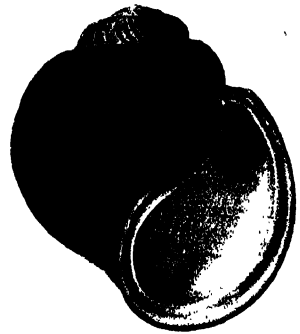
A fine species from Venezuela, distinguished by its oblong Cassis-like form.



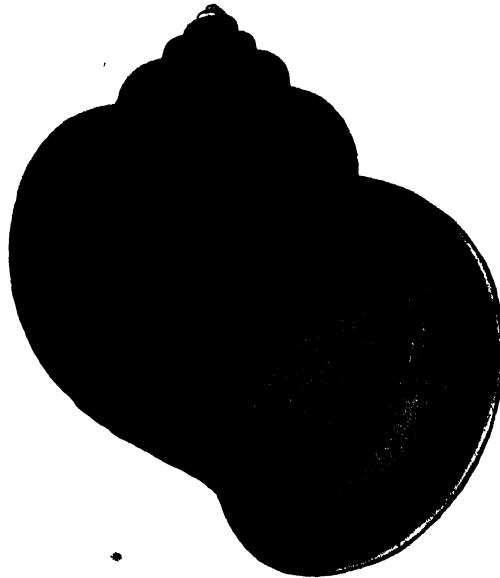




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61.

# AMPULLARIA.

## PLATE XIII.

### Species 57. (Mus. Cuming.)

AMPULLARIA MAURA. *Amp. testā globosā, angustē umbilicatā, spirā breviusculā, anfractibus ad suturas planulatis, deinde rotundatis, lævibus; saturatē olivaceā; aperturā ovatā, labro intus purpureo-nigro tincto.*

THE MOOR AMPULLARIA. Shell globose, narrowly umbilicated, spire rather short, whorls a little flattened at the sutures, then rounded, smooth; dark olive; aperture ovate, lip stained within with purple-black.

Hab. —? *from, Havel.*

Of a particularly globose form, the lip being characteristically stained within with purple or chestnut-black.

### Species 58. (Mus. Cuming.)

AMPULLARIA CARINATA. *Amp. testā globosā, crassā, angustē umbilicatā, spirā subobtusā, anfractibus supernē plano-angulatis, deinde convexis; lutescente-olivaceā; aperturā ovatā, labro incrassato, luteo tincto.*

THE KEELED AMPULLARIA. Shell globose, thick, narrowly umbilicated, spire rather obtuse, whorls flatly angled at the upper part, then convex; yellowish-olive; aperture ovate, lip thickened, tinged with yellow.

SWAINSON (not of Lamarck), *Zoological Illustrations.*

Hab. India.

A round shell of solid growth, with the whorls abruptly angled round the upper part, so as to present a narrow shelf, not impressed as in the *A. canaliculata*, which Lamarck further characterizes as having a pointed apex.

### Species 59. (Mus. Cuming.)

AMPULLARIA ERYTHROSTOMA. *Amp. testā globoso-turbinatā, profundē umbilicatā, spirā acuminato-exsertā, anfractibus rotundatis, longitudinaliter corrugato-striatis; intensē olivaceo-castaneā; aperturā ovatā, subamplā, labro intus intensē sanguineo.*

THE RED-MOUTHED AMPULLARIA. Shell globosely turbinated, deeply umbilicated, spire acuminately exerted, whorls rounded, longitudinally wrinkle-stri-

ated; dark olive-chestnut; aperture ovate, rather large, lip deep blood-red within.

Hab. Zanzibar; Mr. T. Thorn.

This fine dark species, with blood-red-stained mouth, is perfectly distinct from any hitherto described.

### Species 60. (Mus. Cuming.)

AMPULLARIA HOPETONENSIS. *Amp. testā subtrigono-globosā, tumidiusculā, mediocriter umbilicatā, anfractibus supernē impresso-declivibus, deinde convexis, lævibus; virescente-olivaceā, versus spiram pallidiore, fasciis angustis saturatioribus cingulatā; aperturā ovatā, fauce nigricante-purpureā.*

THE HOPETOWN AMPULLARIA. Shell somewhat triangularly globose, rather swollen, moderately umbilicated, whorls impressly slanting round the upper part, then convex, smooth; greenish-olive, paler towards the spire, encircled with narrow darker bands; aperture ovate, interior blackish-purple.

LEA, *Trans. Amer. Phil. Soc.* vol. v. pl. 19. f. 84.

Hab. Darien, Georgia.

A tumid globose shell, inclined somewhat angularly towards the base.

### Species 61. (Mus. Cuming.)

AMPULLARIA LUBRICA. *Amp. testā globoso-ovatā, angustissimē umbilicatā, spirā subexsertā, apice obtusā, anfractibus convexis, longitudinaliter rugoso-striatis, nitentibus quasi lubricatis; livido-olivaceā, atro-tinctā; aperturā ovatā, basi subeffusā.*

THE GLAZED AMPULLARIA. Shell globosely ovate, very narrowly umbilicated, spire rather exerted, obtuse at the apex, whorls convex, longitudinally rugosely striated, shining as if glazed; livid olive, black-smearred; aperture ovate, rather effused at the base.

Hab. —?

Of a peculiar glazed livid black-smearred olive-colour, with a narrow scarcely perceptible umbilicus, the aperture being a little effused at the base.









63a.



62



63b.



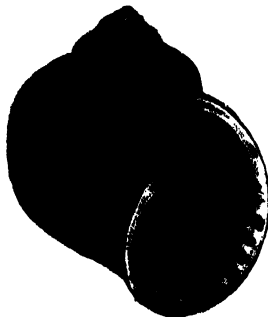
64.



65a.



65b.



66

# AMPULLARIA.

## PLATE XIV.

### Species 62. (Mus. Cuming.)

AMPULLARIA COMPACTA. *Amp. testā subgloboso-ovatā, rix umbilicatā, spirā breviusculā, anfractibus convexis, laevibus; fulvescente-olivaceā, fasciis virescentibus cingulatā; aperturā oblongo-ovatā, ad marginem marmoratā.*

THE COMPACT AMPULLARIA. Shell somewhat globosely ovate, scarcely umbilicated, spire rather short, whorls convex, smooth; fulvous-olive, encircled with greenish bands; aperture oblong-ovate, marbled at the edge.

Hab. Malacca.

A smooth dark olive species, scarcely umbilicated, with rather a contracted aperture, the interior being purple-brown, with a thickened rim of opaque blue-white near the

### Species 63. (Fig. a, b, Mus. Cuming.)

AMPULLARIA NOTABILIS. *Amp. testā subquadrato-ovatā, tenui, inflatā, umbilicatā, spirā brevissimā, anfractibus rotundato-productis, laevibus, malleatis; fulvo-spadiaceā, fasciis angustis, interruptis, subobsoletis cingulatā; aperturā ampliā, fauce conspicuē fasciatā.*

THE REMARKABLE AMPULLARIA. Shell somewhat squarely ovate, thin, inflated, umbilicated, spire very short, whorls rotundately produced round the upper part, smooth, malleated; fulvous-fawn, encircled with faint narrow interrupted bands; aperture large, with the bands conspicuously marked in the interior.

Hab. —?

A light inflated species, having the upper part of the whorls almost on a plane with the spire.

### Species 64. (Mus. Cuming.)

AMPULLARIA OVATA. *Amp. testā ovatā, tumidiūsculā, subangustē umbilicatā, spirā exsertā, anfractibus convexis, undato-striatis; virescente-olivaceā; aperturā ovatā, labro columellari subrecurso.*

THE OVATE AMPULLARIA. Shell ovate, rather swollen, rather narrowly umbilicated, spire exserted, whorls

convex, wave-striated; greenish-olive; aperture ovate, columellar lip slightly recurved.

OLIVIER, Voy. dans l'Empire Ottoman, l'Egypte et la Perse, vol. ii. p. 39. pl. 31. f. 1.

Hab. Egypt.

Of a regularly tumid ovate form, characterized with longitudinally waved striae.

### Species 65. (Fig. a, b, Mus. Cuming.)

AMPULLARIA NUBILA. *Amp. testā conico-ovatā, Turbini-formi, solidā, vix umbilicatā, spirā acuminato-exsertā, anfractibus rotundatis, laevibus, hic illic varicosis; lutescente, olivaceo-viridi interruptē fasciatā et nebulatā; aperturā parviūsculā, subcirculari, obliquē effusā.*

THE CLOUDY AMPULLARIA. Shell conically ovate, Turbo-shaped, solid, scarcely umbilicated, spire acuminately exserted, whorls rounded, smooth, here and there varicose; yellowish, interruptedly banded and clouded with olive-green; aperture rather small, nearly circular, obliquely effused.

Hab. River Salomoens; Mr. Yates.

A solid Turbo-like species, unusually acuminately convoluted, clouded with olive-green upon a dull fulvous-yellow ground.

### Species 66. (Mus. Cuming.)

AMPULLARIA TROCHULUS. *Amp. testā globosā, subampliter umbilicatā, spirā breviusculā, aculē acuminatā, anfractibus superne declivibus, deinde convexis; fulvo-olivaceā, fasciis angustis virescentibus numerosis cingulatā; aperturā oblongā, subangustā, fauce conspicuē fasciatā.*

THE TOP AMPULLARIA. Shell globose, rather largely umbilicated, spire rather short, sharply acuminated, whorls slanting round the upper part, then convex; fulvous-olive, encircled with numerous narrow green bands; aperture oblong, rather narrow, bands conspicuous in the interior.

Hab. —?

A globose many-banded shell, with a characteristic sharply acuminated spire.



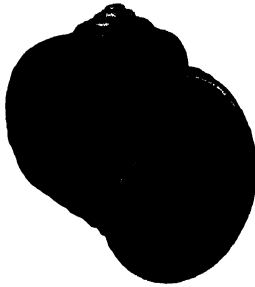




67.



68 b.



69.



70 a.



70 b.



71

# AMPULLARIA.

## PLATE XV.

### Species 67. (Mus. Cuming.)

AMPULLARIA MALABARICA. *Amp. testā ovatā, angustē umbilicatā; fulvo-olivaceā, spirā subexsertā, anfractibus supernē declivibus et minutē rugosis, deinde convexis, levibus, nitentibus, vix malleatis; aperturā ovatā, labro tenui, intus incrassato.*

THE MALABAR AMPULLARIA. Shell ovate, narrowly umbilicated; fulvous-olive, spire somewhat exserted, whorls slanting at the upper part and minutely wrinkled, then convex, smooth, shining, faintly malleated; aperture ovate, lip thin, thickened within.

PHILIPPI, Küster, Conch. Cab. *Ampullaria*, p. 29. pl. 7. f. 8.

*Hab.* Malabar.

The outer surface of this species is shining fulvous-olive, with the umbilicus almost obsolete.

### Species 68. (Fig. a, b, Mus. Cuming.)

AMPULLARIA PRODUCTA. *Amp. testā oblongo-ovalē, ad basin productā, angustē umbilicatā, umbilico ferē obsolete, spirā suboblusā, anfractibus supernē declivibus et tenuirugosis, deinde plano-convexis; olivaceā, rufocastaneo fasciatā; aperturā oblongā, ad basin effusā, ad marginem maculatā.*

THE PRODUCED AMPULLARIA. Shell oblong-oval, produced at the base, narrowly umbilicated, umbilicus almost obsolete, spire rather obtuse, whorls slanting, and finely wrinkled at the upper part, then flatly convex; olive, banded with reddish-chestnut; aperture oblong, effused at the base, spotted at the edge.

*Hab.* — ?

This species is chiefly characterized by its oblong-oval form, produced and effused at the base.

### Species 69. (Mus. Cuming.)

AMPULLARIA REFLEXA. *Amp. testā globosā, subprofundē umbilicatā, spirā brevi, anfractibus ad suturam subimpressis, deinde rotundatis, levibus, nitentibus, obscurē*

*corrugatis et malleatis; virente-olivaceā, lineis fasciisque angustis nigricantibus cingulatā; aperturā ovatā, intus nigricante-purpureā, labro intus nigrescente.*

THE REFLECTED AMPULLARIA. Shell globose, rather deeply umbilicated, spire short, whorls somewhat impressed at the suture, then rounded, smooth, shining, obscurely wrinkled and malleated; greenish-olive, encircled with dark lines and narrow bands; aperture ovate, interior blackish-purple, lip black within.

SWAINSON, Zoological Illustrations, vol. iii. pl. 172.

*Hab.* — ?

A globose shell, very symmetrically convoluted, chiefly distinguished by its blackish-purple interior, the lip being stained within darker.

### Species 70. (Fig. a, b, Mus. Cuming.)

AMPULLARIA OBLONGA. *Amp. testā subtrigono-oblongā, solidiusculā, angustē umbilicatā, spirā subpyramidalē, anfractibus ad suturam plano-impressis, deinde rotundato-angulatis; albidā, epidermide fulvā indutā, apice carnea; aperturā angustē oblongā, labro columellari reflexo.*

THE OBLONG AMPULLARIA. Shell somewhat triangularly oblong, rather solid, narrowly umbilicated, spire subpyramidal, whorls flatly impressed at the suture, then rotundately angled; whitish, covered with a fulvous epidermis, flesh-tinged at the apex; aperture narrowly oblong, columellar lip reflected.

SWAINSON, Zoological Illustrations, vol. iii. pl. 136.

*Hab.* — ?

An interesting species, distinguished by its peculiarly oblong form, and light fulvous external colouring.

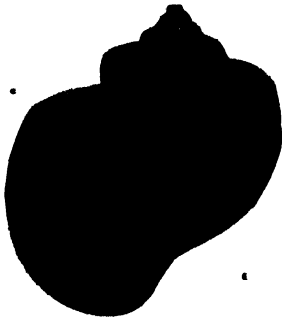
### Fig. 71. (Mus. Cuming.)

The shell here figured is a variety of *A. compacta*, represented in the preceding Plate, of which there are several, all distinguished by a peculiar narrow contracted umbilicus.

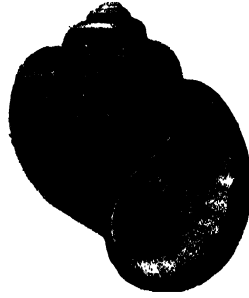




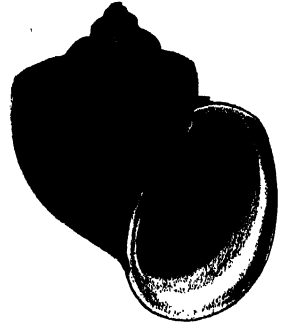




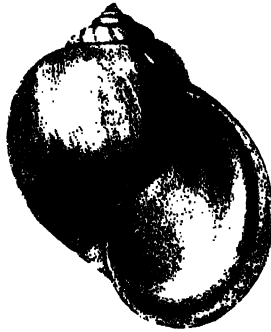
73a.



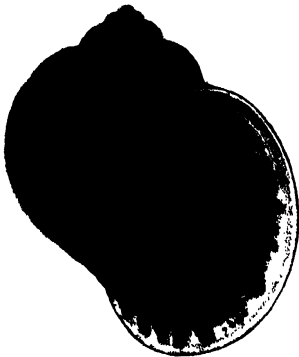
72.



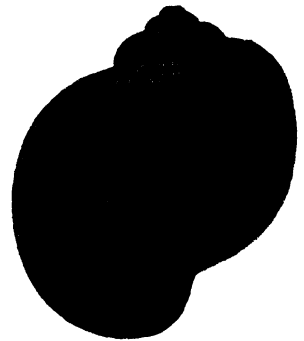
73b.



74.



75a.



75b.



76.

# AMPULLARIA.

## PLATE XVI.

### Fig. 72. (Mus. Cuming.)

An interesting banded variety of *A. sordida*, represented at Pl. III. Fig. 14, presenting a link with *A. melanoocheila*, Sp. 24.

### Species 73. (Fig. a, b, Mus. Cuming.)

AMPULLARIA SCALARIS. *Amp. testā pyriformi-ovatā, crassiusculā, umbilicatā, spirā declivi-pyramidalī, acutā, anfractibus superne latē plano-angulatis, deinde convexis, ultimo antice descendente; purpureo-fusca, ad angulum livido-albicante; aperturā ovali, fauce albidā.*

THE LADDER AMPULLARIA. Shell pyriformly ovate, rather thick, unibilicated, spire slantingly pyramidal, sharp, whorls broadly flatly angled at the upper part, then convex, last whorl descending in front; purple-brown, livid whitish at the angle; aperture oval, interior whitish.

D'ORBIGNY, Voy. dans l'Amérique Mérid. Moll. p. 374. pl. 50. f. 1-3.

Hab. Bolivia; D'Orbigny. Bridges.

Singularly distinguished from all other species of the genus by its broad angularly turbinated spire.

### Species 74. (Mus. Cuming.)

AMPULLARIA LABIOSA. *Amp. testā obliquē globosā, subangulatē umbilicatā, spirā exertiusculā, acutā, anfractibus convexis, nitentibus, longitudinaliter striatis et malleatis; fulvo-stramineā; aperturā oblongo-ovatā, expansā, labro columellari reflexo, fauce ad marginem fulvo-aurantiā.*

THE LIPPED AMPULLARIA. Shell obliquely globose, rather narrowly umbilicated, spire somewhat exerted, sharp, whorls convex, shining, longitudinally striated and malleated; fulvous straw-colour; aperture oblong-ovate, expanded, columellar lip reflected, interior fulvous-orange at the edge.

Koch, Philippi, in Küster, Conch. Cab. *Ampullaria*, p. 58. pl. 18. f. 8.

Hab. India.

Of a peculiar obliquely expanded globose form, with a characteristic shining fulvous straw-coloured exterior, the aperture being edged within with fulvous-orange.

### Species 75. (Fig. a, b, Mus. Cuming.)

AMPULLARIA DOLIOIDES. *Amp. testā ovatā, tenui, ventricosā, angustē umbilicatā, spirā brevī, acutā, anfractibus convexis, nitentibus, ad suturas impressis, ultimo ampliter tumido et expanso; cinereo-olivaceā, obscurē rufo-fusciatā, fasciis linearibus, irregularibus; aperturā peramplā, apertā, labro columellari reflexo.*

THE DOLIUM-LIKE AMPULLARIA. Shell ovate, thin, ventricose, narrowly umbilicated, spire short, sharp, whorls convex, shining, impressed at the sutures, last whorl largely swollen and expanded; ash-olive, obscurely red-banded, bands linear, irregular; aperture very large, open, columellar lip reflected.

Hab. Bombay. *A. ...*

An elegantly convoluted species, of light semitransparent substance, the last whorl being unusually larger than the rest, and openly expanded.

### Species 76. (Mus. Cuming.)

AMPULLARIA ENCAUSTICA. *Amp. testā globosā, basin versus obtusē attenuatā, vix umbilicatā, tenui, pellucidā, spirā brevī, obtusā, anfractibus convexis, levibus, nitentibus; virescente-olivaceā; aperturā oblongo-ovatā, labro breviter reflexo, carneolo-aurantio.*

THE ENAMELLED AMPULLARIA. Shell globose, obtusely attenuated towards the base, scarcely umbilicated, thin, transparent, spire short, obtuse, whorls convex, smooth, shining; greenish-olive; aperture oblong-ovate, lip shortly reflected, carnelion-orange.

Hab. — ?

An apparently solid globular species, but in reality, thin and semitransparent. The colour is a shining smooth greenish-olive, with the lip bright







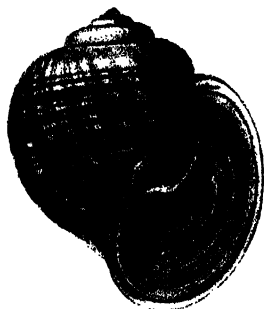
78 a.



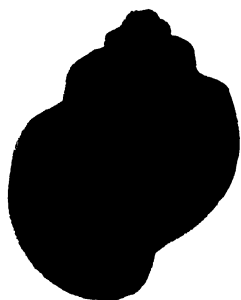
77



78 b.



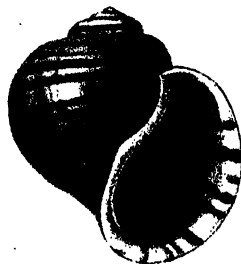
79



80 b.



80 b



81.

# AMPULLARIA.

## PLATE XVII.

### Species 77. (Mus. Cuming.)

AMPULLARIA HEPATARIA. *Amp. testā subglobosā, tenui, subinflata, angustē umbilicatā, spirā breviusculā, acuminatā, anfractibus supernē declivibus, deinde convexis, nitentibus, longitudinaliter striatis; livido-spadicē, versus apicem pellucido-carnē; aperturā ovatā, labro columellari tenuē reflexo.*

THE LIVER AMPULLARIA. Shell subglobose, thin, rather inflated, narrowly umbilicated, spire rather short, pointed, whorls slanting round the upper part, then convex, shining, longitudinally striated; livid fawn-colour, transparent flesh towards the apex; aperture ovate, columellar lip thinly reflected.

Hab. — ?

Of light inflated growth, thin in substance, characterized by a peculiar livid-fawn or liver-colour, changing towards the apex into a transparent flesh tint.

### Species 78. (Fig. a, b, Mus. Cuming.)

AMPULLARIA VITTATA. *Amp. testā globoso-turbinatā, subangustē umbilicatā, spirā exsertā, anfractibus rotundatis, laevibus, supernē tenuissimē plicato-striatis; fulvescente-olivaceā, fasciis brunneis angustis numerosis cingulatā; aperturā ovatā, fauce livido-purpurascē, ad marginem maculatā.*

THE FILLETED AMPULLARIA. Shell globosely turbinated, rather narrowly umbilicated, spire exserted, whorls rounded, smooth, very finely plicately striated at the upper part; fulvous-olive, encircled with numerous narrow brown bands; aperture ovate, interior livid-purple, blotched at the edge.

Hab. Philippine Islands; Cuming.

This species, which Mr. Cuming possesses in several states, is characterized throughout by a uniform fulvous-olive ground, encircled with narrow brown bands more than usually numerous.

### Species 79. (Mus. Cuming.)

AMPULLARIA CANALICULATA. *Amp. testā globosā, subventricosā, subangustē umbilicatā, spirā brevī, acutā, anfractibus convexis, longitudinaliter striatis, supernē concavo-canaliculatis; pallidē cinereā, saturatē fasciatā, sub epidermide tenui olivaceā; aperturā pyriformi-ovatā, carnoscente, prope columellam aurantio-rufā.*

THE CHANNELLED AMPULLARIA. Shell globose, somewhat ventricose, rather narrowly umbilicated, spire short, sharp, whorls convex, longitudinally striated, concavely channelled at the upper part; pale ash, dark banded beneath a thin olive epidermis; aperture pyriformly ovate, bluish, orange-red next the columella.

LAMARCK, Anim. sans vert. vol. viii. p. 534.

Hab. Cashmere; Baron Hügel.

Chiefly distinguished from *A. immersa* and other channelled species of the genus by its sharp-pointed, though short, spire, a character specially noted by Lamarck.

### Species 80. (Fig. a, b, Mus. Cuming.)

AMPULLARIA VITREA. *Amp. testā ovato-turbinatā, tenuissimā, cornē, inflatā, parum umbilicatā; spirā exsertā, anfractibus primis quatuor angulatis, ad angulum indistinctē carinatis, anfractu ultimo supernē declivi, angulo evanidō, deinde convexo; pellucido-brunneā, flammis opaco-albidis longitudinaliter irregulariter strigatā; aperturā ovatā, labro columellari tenuē reflexo, nitente-atro.*

THE GLASSY AMPULLARIA. Shell ovately turbinated, very thin, horny, inflated, but slightly umbilicated, spire exserted, first four whorls angled, indistinctly keeled at the angle, last whorl slanting round the upper part, the angle gradually disappearing, then rounded; transparent brown, longitudinally irregularly streaked with opaque-whitish flames; aperture ovate, columellar lip thinly reflected, shining black.

*Helix vitrea*, Born, Test. Mus. Vindobonensis, pl. 15. f. 15, 16. Chemn. Conch. vol. xi. p. 282. pl. 210. f. 2072, 2073.

*Bulinus vitreus*, Bruguière, Deshayes.

Hab. — ?

This extremely rare and curious shell, of transparent light horny texture, variegated with opaque epidermis-like flakes, hitherto referred to the genus *Bulinus*, appears to belong rather to *Ampullaria*.

### Species 81. (Mus. Cuming.)

AMPULLARIA CUMINGII. *Amp. testā subgloboso-ovatā, solidiusculā, profundē umbilicatā, spirā brevī, anfractibus supernē planiusculis, deinde convexis, subdiscoideis; fulvo-cinereā, fasciis angustis et lineis paucis rufescentibus cingulatā; aperturā ovatā, effusā, labro columellari subincrassato.*

CUMING'S AMPULLARIA. Shell subglobose-ovate, rather solid, deeply umbilicated, spire short, whorls rather flat at the upper part, then convex, somewhat discoid; fulvous-ash, encircled with a few reddish narrow bands and lines; aperture ovate, effused, columellar lip rather thickened.

KING, Zoological Journal, vol. v. p. 344.

Hab. Island of Taboga, Panama.

A solid shell, of somewhat discoid growth, with the aperture thickened and much effused.

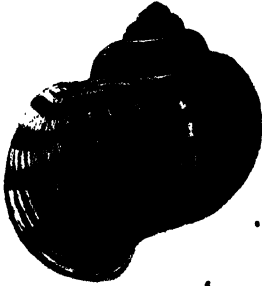








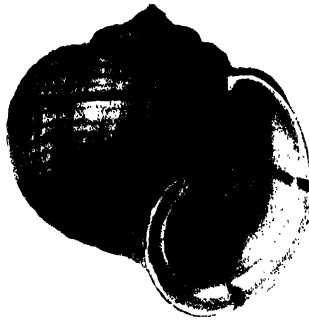
82



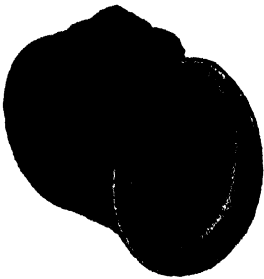
83a.



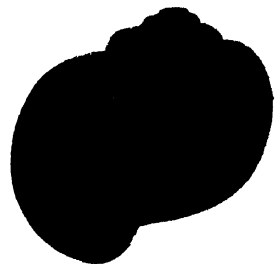
83b.



84



85a.



85b.



86.

# AMPULLARIA.

## PLATE XVIII.

### Species 82. (Mus. Cuming.)

**AMPULLARIA PRUNULUM.** *Amp. testā globosā, subdiscoideā, profundē umbilicatā, spirā breviusculā, acuminatā, anfractibus superne impresso-planis, deinde convexis; livido-olivaceā, lineā fuscescente obscurē cingulatā; aperturā ovatā, labro columellari subeffuso, fauce palidē aurantiā.*

**THE LITTLE PLUM AMPULLARIA.** Shell globose, subdiscoid, deeply umbilicated, spire rather short, acuminate, whorls impressly flattened round the upper part, then convex; livid olive, obscurely encircled with a faint brown line; aperture ovate, columellar lip rather effused, interior pale orange.

*Hab.* New Granada.

Of the same typical outline as *A. Introstoma*, but less effused, and having a narrower umbilicus, with little external painting except a faint line or two.

### Species 83. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA CUBENSIS.** *Amp. testā subglobosā, subprofundē umbilicatā, spirā exsertā, anfractibus rotundatis, laevibus; livido-cinereā, fasciis angustis rufis regulariter cingulatā; aperturā ovatā, subexpansā.*

**THE CUBA AMPULLARIA.** Shell subglobose, rather deeply umbilicated, spire exserted, whorls rounded, smooth; livid ash, regularly encircled with narrow red bands; aperture ovate, rather expanded.

*Hab.* Cuba.

The regularity of the red bands with which this species is striped, is rather a characteristic feature.

### Species 84. (Mus. Cuming.)

**AMPULLARIA LUTEOSTOMA.** *Amp. testā orbiculato-ventricosā, subdiscoideā, perampliter umbilicatā, spirā breviusculā, acuminatā, anfractibus superne subimpressis, deinde rotundatis; flavescente-fuscā, lineis brunneis duabus vel tribus distantibus cingulatā; aperturā ovatā, labro subeffuso, fauce aurantiā.*

**THE YELLOW-MOUTH AMPULLARIA.** Shell orbicularly ventricose, somewhat discoid, very largely umbilicated, spire rather short, acuminate, whorls rather

impressed round the upper part, then rounded; yellowish-brown, encircled with two or three distant brown lines; aperture ovate, lip somewhat effused, interior orange.

SWAINSON, Zoological Illustrations, vol. iii. pl. 157.

*Ampullaria pachystoma* and *ballcata*, Philippi.

*Hab.* Venezuela.

Readily distinguished from the preceding species by its larger size and rougher epidermis-clad texture, the columellar lip being less broadly reflected back.

### Species 85. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA GLAUCA.** *Amp. testā orbiculato-ventricosā, subdiscoideā, ampliter umbilicatā, spirā brevi, anfractibus superne planulatis, deinde plano-convexis; fuscescente, fasciis lineisque glauco-castaneis densē cingulatā; aperturā ovatā, amplā, labro columellari latē effuso, fauce aurantiā.*

**THE GLAUCCUS AMPULLARIA.** Shell orbicularly ventricose, somewhat discoid, largely umbilicated, spire short, whorls flattened round the upper part, then flatly convex; pale brown, closely encircled with glaucous-chestnut lines and bands; aperture ovate, large, columellar lip broadly effused, interior orange.

*Helix glauca*, Linnaeus, Mus. Uric. p. 667.

*Nerita effusa*, Müller.

*Helix oculus communis*, Gmelin.

*Helix neritina*, Gmelin.

*Bulinus effusus*, Bruguière.

*Ampullaria effusa*, Swainson.

*Ampullaria Guyanensis*, Guérin.

*Hab.* — ?

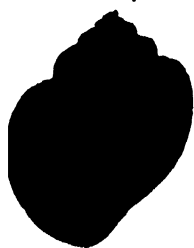
A very characteristic species, distinguished by its shining porcelain-like aspect and broadly effused reflection of the columellar lip, which, with the interior, is enamelled orange, the external surface of the shell being closely lined and banded with glaucous-chestnut.

### Fig. 86. (Mus. Cuming.)

A variety of *A. Paludinoidea*, represented at Pl. II. Fig. 9, in which the whorls are more globosely convoluted.



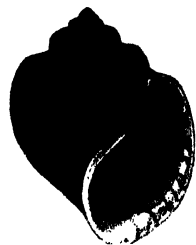




88a.



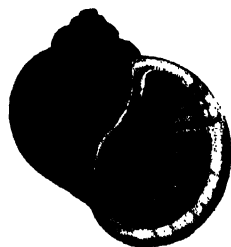
87.



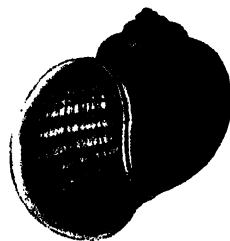
88b.



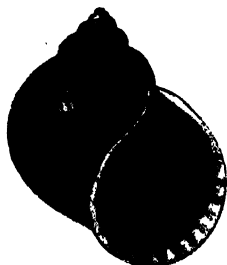
89.



90a.



90b.



91.

# AMPULLARIA.

## PLATE XIX.

Fig. 87. (Mus. Cuming.)

A variety of *A. compacta*, represented at Pl. XIV. Fig. 62.

Species 88. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA FILOSA.** *Amp. testā ovatā, imperforatā, spirā brevi, apice plus minus erosā, anfractibus superne plano-angulatis, striis elevatis undique filosis; fulvescente-castaneā, fasciis angustis rufis numerosis cingulatā; aperturā oblongā, basi effusā, labro columellari albo, plano-reflexo.*

**THE THREADED AMPULLARIA.** Shell ovate, imperforated, spire short, more or less eroded at the apex, whorls flatly angled at the upper part, encircled throughout with thread-like raised striae; fulvous-chestnut, encircled with numerous narrow red bands; aperture oblong, effused at the base, columellar lip white, flatly reflected.

*Hab.* Madagascar.

This species is distinguished by a typical character of its own, represented most conspicuously in the surface being sculptured throughout with thread-like raised striae.

Species 89. (Mus. Cuming.)

**AMPULLARIA COMPLICATA.** *Amp. testā oblongo-turbinatā, subimperforatā, spirā exsertā, anfractibus convexis, subangustis, rotundatis; flavescente-olivaceā, lineis rufo-fuscis, numerosis, irregularibus; aperturā ovatā, parvā, labro columellari albo,*

**THE CONTRACTED AMPULLARIA.** Shell oblong-turbinated, almost imperforated, spire exserted, whorls convex, rather narrow, rounded; yellowish-olive, encircled with numerous irregular red-brown lines; aperture ovate, small, columellar lip white, reflected.

*Hab.* —?

A species well distinguished by its oblong turbinated form, and contracted aperture. The irregular linear painting is also a characteristic feature.

Species 90. (Fig. 90 a, b, and 91, Mus. Cuming.)

**AMPULLARIA APERTA.** *Amp. testā conoideo-ovatā, angustē umbilicatā, spirā breviusculā, acuminatā, anfractibus convexis, laevibus; pallidē cinereā, lineis rufescentibus cingulatā, epidermide olivaceā subcornēā indutā; aperturā subcirculari, subamplā, conspicuē obliquē effusā, labro reflexo.*

**THE OPEN AMPULLARIA.** Shell conoidly ovate, narrowly umbilicated, spire rather short, acuminate, whorls convex, smooth; pale ash, encircled with red lines, and covered with an olive subhorny epidermis; aperture nearly circular, rather large, conspicuously obliquely effused, lip reflected.

**PHILIPPI,** Zeitschrift für Malac. 1849, p. 18.

*Hab.* —?

Characterized by a peculiarly expanded aperture, and a light ash, red-lined colouring, covered by a thin shining horny epidermis.









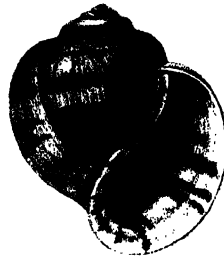
93 a.



92.



93 b.



94.



95 a.



95 b.



96.

# AMPULLARIA.

## PLATE XX.

### Species 92. (Mus. Cuming.)

**AMPULLARIA MÆSTA.** *Amp. testā ovato-globosā, angustā umbilicatā, spirā subexsertā, anfractibus supernè subplanulatis, deinde rotundatis, lævibus; sordidè olivaceā, fasciis angustis saturatioribus cingulatā; aperturā lunari-ovatā, labro intus lutescente-albo.*

**THE MOURNING AMPULLARIA.** Shell ovately globose, narrowly umbilicated, spire rather exserted, whorls slightly flattened at the upper part, then rounded, smooth; dull olive, encircled with narrow darker bands; aperture lunar-ovate, lip yellowish-white within.

*Hab.* Ceylon; F. Layard.

A dull greenish-olive species, of globose form, narrowly compressly umbilicated, encircled with numerous faint bands, irregular in width, but mostly linear.

### Species 93. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA GOSSEI.** *Amp. testā ovato-globosā, solidiusculā, compressè umbilicatā, spirā subexsertā, anfractibus supernè rotundato-angulatis, deinde convexis, obsolete liralibus et malleatis; castaneo-fuscā, obscurè fasciatā; aperturā ovalē, saucè rufescente-aurantiā, labro columellari incrassato, reflexo.*

**GOSSE'S AMPULLARIA.** Shell ovately globose, rather solid, compressly umbilicated, spire rather exserted, whorls rotundately angled round the upper part, then convex, obsolete ridged and malleated; chestnut-brown, obscurely banded; aperture ovate, interior reddish-orange, columellar lip thickened, reflected.

*Hab.* Jamaica; Gosse.

Allied to *A. decussata*, but of more solid growth, with the spire more exserted, and the columellar lip more thickened.

### Species 94. (Mus. Cuming.)

**AMPULLARIA CINEREA.** *Amp. testā globosā, tenui, subinflata, angustè umbilicatā, spirā brevi, anfractibus rotundatis, lævibus, ultimo antice descendente; pallidè cinerā, fasciis linearibus rufescente-fuscis tribus ad quatuor cingulatā; aperturā pyriformi-ovatā, labro columellari tenuè reflexo.*

**THE ASH-COLOURED AMPULLARIA.** Shell globose, thin, rather inflated, narrowly umbilicated, spire short, whorls rounded, smooth, the last ascending in front; pale ash, encircled with three to four linear reddish-brown bands; aperture pyriformly ovate, columellar lip thinly reflected.

*Hab.* Ceylon.

A peculiarly rounded species, thin and somewhat inflated, of a light ash-colour, encircled with faint bands, which, towards the apex, are like red-brown lines, of which only the uppermost one is visible.

### Species 95. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA ELECTRINA.** *Amp. testā ovalē, tenuissimā, inflatā, profundè umbilicatā, spirā brevi, acuminatā, anfractibus ad suturam angustè impressis, deinde convexis, undique malleatis, nitentibus; rufescente-spadicē, obscurè multifasciatā; aperturā ovalē, subamplā, labro columellari tenuè reflexo.*

**THE AMBER AMPULLARIA.** Shell ovate, very thin, inflated, deeply umbilicated, spire short, acuminate, whorls narrowly impressed at the suture, then convex, everywhere malleated, shining; reddish-fawn colour, obscurely many-banded; aperture ovate, rather large, columellar lip thinly reflected.

*Hab.* — ?

A very light inflated species, of a pale amber-tinted reddish-fawn colour.

### Species 96. (Mus. Cuming.)

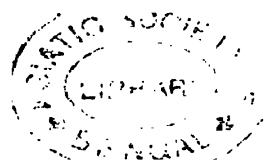
**AMPULLARIA JAVANICA.** *Amp. testā conico-oblongā, vix umbilicatā, spirā exsertā, anfractibus convexis, subangustis, lævibus; intensè olivaceā; aperturā ovalē, parviusculā, labro tenui.*

**THE JAVA AMPULLARIA.** Shell conically oblong, scarcely umbilicated, spire exserted, whorls convex, rather narrow, smooth; dark olive; aperture ovate, rather small, lip thin.

*Hab.* Java.

A smooth olive species, scarcely umbilicated, chiefly distinguished by its conically oblong form.







97.



98a



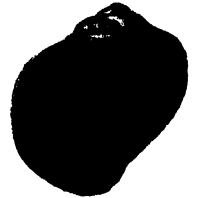
98b.



99a



100a.



100b



101b.



101b.



102

# AMPULLARIA.

PLATE XXI.

Species 97. (Mus. Cuming.)

AMPULLARIA TERES. *Amp. testā subglobosā, subampliter umbilicatā, spirā brevi, anfractibus supernè subplanulatis, deinde convexis, lœvibus; olivaceā, fasciis quatuor vel quinque rufescentibus cingulatā; aperturā ovalē, labro columellari subreflexo aurantio tincto.*

THE TAPERING AMPULLARIA. Shell subglobose, rather largely umbilicated, spire short, whorls somewhat flattened at the upper part, then convex, smooth; olive, encircled with four or five reddish bands; aperture ovate, columellar lip slightly reflected, orange-tinted.

PHILIPPI, Zeitschrift für Malac. 1849, p. 19. Kuster, Monog. p. 38. pl. 10. f. 4.

Hab. —?

This is the nearest allied species to *A. effusa*, which it much resembles, but is uniformly of smaller size, with the columellar lip less broadly expanded.

Species 98. (Fig. a, b, Mus. Cuming.)

AMPULLARIA SIMPLEX. *Amp. testā ovalē, vix umbilicatā, spirā brevi, anfractibus convexis, lœvibus, ultimo subexpanso; olivaceā, fasciis angustis lineisque numerosis nigricante-rufis cingulatā; aperturā ovalē, labro columellari tenuè reflexo.*

THE SIMPLE AMPULLARIA. Shell ovate, scarcely umbilicated, spire short, whorls convex, smooth, the last rather expanded; olive, encircled with numerous blackish-red lines and narrow bands; aperture ovate, columellar lip thinly reflected.

Hab. —?

A thin, somewhat expanded shell, scarcely umbilicated against the thinly reflected columellar lip, encircled with numerous blackish-red pencil lines and narrow bands.

Species 99. (Fig. a, b, Mus. Cuming.)

AMPULLARIA CERASUM. *Amp. testā subglobosā, minutè umbilicatā, spirā parviusculā, acutā, anfractibus convexis, longitudinaliter plicato-striatis; olivaceo-cinereis pallidissimè fasciatā; aperturā rotundato-ovalē, labro reflexo, vividè miniato.*

THE CHERRY AMPULLARIA. Shell subglobose, minutely umbilicated, spire rather small, sharp, whorls convex, longitudinally plicately striated; ash-olive, very faintly banded; aperture rotundately ovate, lip reflected, bright scarlet.

HANLEY, Conch. Miscellany.

Hab. Mexico.

Of an obscure ash-olive colour, with a striking, bright cherry-coloured lip.

Species 100. (Fig. a, b, Mus. Cuming.)

AMPULLARIA PATULA. *Amp. testā suborbiculatā, imperforatā, tenui, spirā brevissimā, obtusā, anfractibus supernè declivi-planulatis, deinde convexis, ultimo latissimè expanso; virescente-olivaceā, lineis nigris irregularibus cingulatā; aperturā amplā, expansā.*

THE OPEN-MOUTHED AMPULLARIA. Shell suborbicular, imperforated, thin, spire very short, obtuse, whorls slantingly flattened round the upper part, then convex, the last very widely expanded; greenish-olive, encircled with irregular black lines; aperture large, expanded.

Hab. —?

A thin open-mouthed species, belonging to the same peculiar type of the genus as the large *A. Neritoides*.

Species 101. (Fig. a, b, Mus. Cuming.)

AMPULLARIA INTROPICTA. *Amp. testā obliquè globosā, subdepressā, angustè umbilicatā, spirā brevi, obtusā, plus minus erosā, anfractibus angustis, supernè planatis, longitudinaliter striatis; rufescente-aurantiā, fasciis angustis olivaceis cingulatā; aperturā fere circulari, expansā, faucē vividè coloratā, labro columellari tenuè reflexo.*

THE INNER PAINTED AMPULLARIA. Shell obliquely globose, rather depressed, narrowly umbilicated, spire short, obtuse, more or less eroded, whorls narrow, flattened at the upper part, longitudinally striated; reddish-orange, encircled with narrow olive bands; aperture nearly circular, expanded, vividly coloured within, columellar lip thinly reflected.

Hab. —?

A very distinct and beautiful species, of an obliquely expanded depressed form, of a warm orange-colour, encircled with narrow olive bands, the colouring being particularly warm and bright in the interior of the shell.

Species 102. (Mus. Cuming.)

AMPULLARIA OLEA. *Amp. testā subglobosā, vix umbilicatā, spirā breviusculā, anfractibus rotundatis, longitudinaliter striatis; nilente-olivaceā, fasciis duabus angustis nigricante-rufis distantibus cingulatā; aperturā pyri-formi-ovalē.*

THE OLIVE AMPULLARIA. Shell subglobose, scarcely umbilicated, spire rather short, whorls rounded, longitudinally striated; shining olive, encircled with two distant narrow blackish-red bands; aperture pyriformly ovate.

Hab. —?

Of a peculiar compact subglobose form, with a shining olive surface, encircled with two distant linear bands.









104a.



105.



104b.



105a.



106a.



106b.



105b.



107a.



107b.



108

# AMPULLARIA.

PLATE XXII.

Species 103. (Mus. Cuming.)

AMPULLARIA PERNAMBUCENSIS. *Amp. testā obliquē orbiculari, imperforatā, lateraliter compressā, spirā parvā, anfractibus convexis, ultimo per amplo, expanso; olivaceā, lineis nigricantibus cingulatā; aperturā patulā, fance nilente castaneā, labro tenuē reflexo.*

THE PERNAMBUCO AMPULLARIA. Shell obliquely orbicular, imperforated, laterally compressed, spire small, whorls convex, the last very large and expanded; olive-ash, encircled with faint blackish lines; aperture wide open, interior shining chestnut, lip thinly reflected.

*Hab.* Pernambuco.

A laterally compressed expanded shell, of light texture, richly coloured with dark chestnut in the interior.

Species 104. (Fig. *a, b*, Mus. Cuming.)

AMPULLARIA BULLA. *Amp. testā subglobosā, angulatē umbilicatā, spirā subobtusā, anfractibus rotundatis, levibus; fulvo-olivaceā, lineis rufescentibus cingulatā; aperturā rotundato-ovatā, labro tenuē reflexo.*

THE BUBBLE AMPULLARIA. Shell subglobose, narrowly umbilicated, spire rather obtuse, whorls rounded, smooth; fulvous-olive, encircled with red lines; aperture rotundately ovate, lip thinly reflected.

*Hab.* — ?

Of simple character, encircled upon a fulvous-olive ground with red lines, which are seen more conspicuously in the interior.

Species 105. (Fig. *a, b*, Mus. Cuming.)

AMPULLARIA ROISSYI. *Amp. testā oblongo-conicā, solidiusculā, angulatē profundē umbilicatā, spirā obtusā, anfractibus rotundatis, supernē declivibus, exilissimē decussatim striatis; fulvo-albidā, fasciis angustis olivaceo-nigricantibus cingulatā; aperturā pyriformi-ovatā, labro columellari subcalloso, subreflexo.*

ROISSY'S AMPULLARIA. Shell oblong-conical, rather solid, narrowly deeply umbilicated, spire rather obtuse, whorls rounded, slanting at the upper part, very finely decussately striated; fulvous-white, encircled with narrow olive-black bands; aperture pyriformly ovate, columellar lip rather callous, slightly reflected.

D'ORBIGNY, Moll. Voy. dans l'Amér. Mérid. p. 377. pl. 52. f. 1-3.

*Hab.* Rio Parana, La Plata; D'Orbigny.

The substance of this shell is rather more callous than usual, typical of a distinct section of the genus.

Fig. 106. (Mus. Cuming.)

The shell here represented proves to be an oblong convoluted variety of *A. crassa*, described at Pl. I. Fig. 5.

Species 107. (Fig. *a, b*, Mus. Cuming.)

AMPULLARIA PHYSOIDES. *Amp. testā semiglobosā, tenuissimā, vir umbilicatā, spirā parvā, anfractibus convexis, longitudinaliter eleganter impressē undato-striatis, ultimo perinflato; pallidē fulvā, carneo lineatā, fasciis paucis rufis obscuris cingulatā; aperturā ampliā, labro tenuē reflexo.*

THE PHYSA-LIKE AMPULLARIA. Shell semiglobose, very thin, scarcely umbilicated, spire small, whorls convex, longitudinally elegantly impressly wave-striated, last whorl much inflated; light fulvous, flesh-tinged, encircled with a few obscure linear red bands; aperture large, lip thinly reflected.

*Hab.* Pernambuco.

Of the same typical form as *A. Pernambucensis*, but thinner and more inflated, and of a pale flesh-tinged fulvous colour.

Species 108. (Mus. Cuming.)

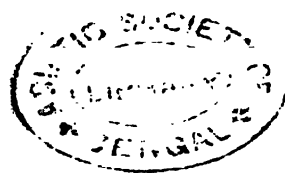
AMPULLARIA SAXEA. *Amp. testā oblongo-ovatā, solidiusculā, angulatē oblectē umbilicatā, spirā subobtusā, anfractibus supernē subdepressis, obsolete angulatis, deinde rotundatis; olivaceā; aperturā pyriformi, oblongā, labro columellari tenuē reflexo.*

THE STONY AMPULLARIA. Shell oblong-ovate, rather solid, with a narrow covered umbilicus, spire rather obtuse, whorls a little depressed round the upper part, obsoletely angled, then rounded; olive; aperture pyriformly oblong, columellar lip thinly reflected.

*Hab.* — ?

An oblong-ovate shell, of rather solid texture, characterized by a faint depression round the upper whorls, causing a scarcely perceptible angle.







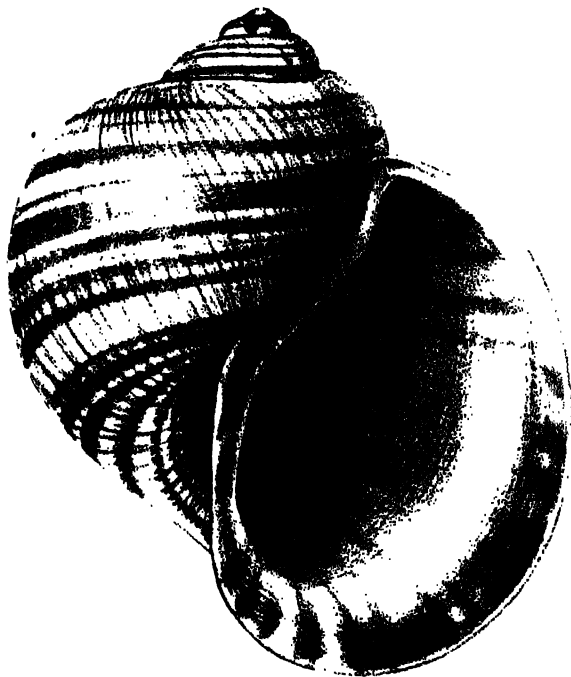
110a



109



110b



111



112



113

# AMPULLARIA.

PLATE XXIII.

Species 109. (Mus. Hanley.)

**AMPULLARIA LARGILLIERTI.** *Amp. testā ovato-globosā, angustè umbilicatā, tenuiculā, spirā obtusā, anfractibus rotundatis, concentricè plicato-striatis; olivaceo-viridī, fasciis linearibus nigricantibus cingulatā; aperturā ovalā, subeffusā.*

**LARGILLIERT'S AMPULLARIA.** Shell ovately globose, narrowly umbilicated, rather thin, spire obtuse, whorls rounded, concentrically plicately striated; olive-green, encircled with blackish linear bands; aperture ovate, somewhat effused.

PHILIPPI, Zeitschrift für Malac. 1848, p. 192.

*Hab.* Madagascar; Largilliert.

This shell, which we take to be Dr. Philippi's *A. Largillierti*, is the nearest allied to *A. Layardi* from Ceylon.

Species 110. (Fig. a, b, Mus. Metcalfe.)

**AMPULLARIA BILINEATA.** *Amp. testā globosā, tenui, subinflata, vix umbilicatā, spirā brevi, obtusā, anfractibus convexis, lævibus, nitentibus; livido-fulvescente, fasciis bilinearibus rufis duabus distantibus cingulatis; aperturā ovalā, labro subeffuso.*

**THE TWO-LINED AMPULLARIA.** Shell globose, thin, rather inflated, scarcely umbilicated, spire short, obtuse, whorls convex, smooth, shining; livid-fulvous, encircled with two distant red bi-linear bands; aperture ovate, lip slightly effused.

*Hab.* — ?

An interesting species from the collection of Mr. Metcalfe, light and globose, with a smooth, shining, livid-fulvous surface, encircled round the centre with a band of two reddish lines, and the same at the base.

Species 41. (Fig. b, Mus. Hanley.)

A fine characteristic specimen of the shell which we ventured to determine at Pl. IX. Sp. 41, to represent *A. fasciata*.

Species 111. (Mus. Hanley.)

**AMPULLARIA DEPRESSA.** *Amp. testā ovalā, subventricosā, imperforatā, spirā breviusculā, anfractibus convexis, supernè subplanulatis; luleo-olivaceā, lineis viridibus cingulatā; aperturā oblongo-ovalā, ad basin subsinuatā.*

**THE DEPRESSED AMPULLARIA.** Shell ovate, subventricose, imperforated, spire rather short, whorls convex, rather flattened at the upper part; yellowish-olive, encircled with green lines; aperture oblong-ovate, somewhat sinuated at the base.

SAY, Exped. S. Peters, vol. ii. p. 264.

*Hab.* — ?

This species differs from *S. paludosa* of the same author, in being of a lighter and more inflated structure, rather attenuated towards the base; it is of a yellow-tinged olive colour, encircled with green lines.

Species 112. (Mus. Hanley.)

**AMPULLARIA BUXEA.** *Amp. testā ovalā, subventricosā, ad basin attenuatā et effusā, imperforatā, spirā breviusculā, anfractibus supernè subdeclivibus, deinde plano-convexis; fuscescente-fulvā, lineis numerosis rufo-olivaceis cingulatā; aperturā oblongo-ovalā.*

**THE BOX AMPULLARIA.** Shell ovate, subventricose, attenuated and effused at the base, imperforated, spire rather short, whorls rather slanting at the upper part, then flatly convex; brownish-fulvous, encircled with numerous reddish-olive lines; aperture oblong-ovate.

*Hab.* — ?

Resembling the former species in the contour of the aperture and absence of umbilicus, but more slanting and inclined to angularity next the suture.

Species 113. (Mus. Hanley.)

**AMPULLARIA HANLEYI.** *Amp. testā turbinatā, tenui, pellucidā, angustè umbilicatā, spirā ampliter exsertā, anfractibus rotundatis, subangustis, lævibus; livido-fulvā, lineis rufescente-fuscis cingulatā; aperturā parvisculā, subcirculari, labro columellari reflexo.*

**HANLEY'S AMPULLARIA.** Shell turbinated, thin, transparent, narrowly umbilicated, spire largely exserted, whorls rounded, rather narrow, smooth; livid-fulvous, encircled with red-brown lines; aperture rather small, nearly circular, columellar lip reflected.

*Hab.* — ?

A semi-transparent turbinated species, quite distinct from any that has preceded it.



FIG. 50017

1900

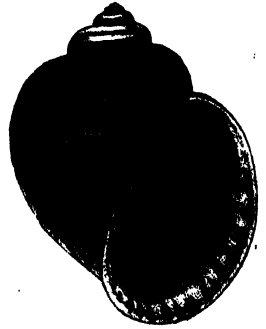




115a



116



115b



116a



116b



117b



117a

# AMPULLARIA.

## PLATE XXIV.

Species 114. (Mus. Hanley.)

**AMPULLARIA TESTUDINEA.** *Amp. testā ovato-ventricosā, tenui, angustè umbilicatā, spirā mediocri, anfractibus convexis, levibus, nitentibus; fulvescente-cinereā, fasciis lineisque ferrugineo-fuscescentibus cingulatā; aperturā ovatā, labro simplici.*

**THE TORTOISE-SHELL AMPULLARIA.** Shell ovately ventricose, thin, narrowly umbilicated, spire moderate, whorls convex, smooth, shining; fulvous-ash, encircled with rust-brown bands and lines; aperture ovate, lip simple.

*Hab.* — ?

A shell of light substance, much painted with light rust-brown bands and lines.

Species 115. (Fig. a, b, Mus. Hanley.)

**AMPULLARIA LINNÆI.** *Amp. testā subovato-turbinatā, ventricosā, subangustè umbilicatā, spirā exsertā, anfractibus rotundatis, levibus, nitentibus, ad suturam rudè impressis; livido-glaucā, fasciis angustis rosaceis cingulatā; aperturā ovalā, labro subeffuso.*

**LINNÆUS'S AMPULLARIA.** Shell ovately turbinated, ventricose, rather narrowly umbilicated, spire exserted, whorls rounded, smooth, shining, somewhat rudely impressed at the suture; livid-glaucous, encircled with pinkish narrow bands; aperture ovate, lip slightly effused.

**PILIPPI, Kuster Conch. Cab. *Ampullaria*, p. 62. pl. 20. f. 6.**

*Hab.* — ?

Of a livid-glaucous colour, smooth and shining, encircled with pale pink linear bands.

Species 116. (Fig. a, b, Mus. Hanley.)

**AMPULLARIA CITREUM.** *Amp. testā oblongo-globosā, subampliter umbilicatā, spirā mediocri, anfractibus ad suturam impressis, deinde convexis, obscurè malleatis, circa umbilicum obtusè angulatis; pallidè fulcā aut virescente, interdum olivaceo fasciatā; aperturā pyri-formi-oblongā, intus aurantio-rufā.*

**THE CITRON AMPULLARIA.** Shell oblong-globose, rather largely umbilicated, spire moderate, whorls impressed at the suture, then convex, obscurely malleated, obtusely angled round the umbilicus; pale-fulvous, or greenish, sometimes banded with olive; aperture pyriformly oblong, orange-red within.

*Hab.* — ?

A fine species, of very distinct character, peculiarly obtusely angled round the umbilicus.

Species 117. (Fig. a, b, Mus. Cuming.)

**AMPULLARIA PICTA.** *Amp. testā oblongo-ventricosā, ampliter profundè umbilicatā, spirā mediocri, anfractibus ad suturam planulatis, deinde plano-convexis, circa umbilicum obtusè angulatis; virescente, fasciis lineisque olivaceis numerosis cingulatā; aperturā oblongo-ovalā, intus aurantio-miniatā.*

**THE PAINTED AMPULLARIA.** Shell oblong-ventricose, largely deeply umbilicated, spire moderate, whorls rather flattened at the suture, then flatly convex, obtusely angled round the umbilicus; greenish, encircled with numerous olive bands and lines; aperture oblong-ovate, orange-vermilion within.

*Hab.* — ?

Closely allied to the preceding species, especially in the peculiar obtusely angled structure of the whorl around the umbilicus, but uniformly distinct in all its stages of growth in general contour.











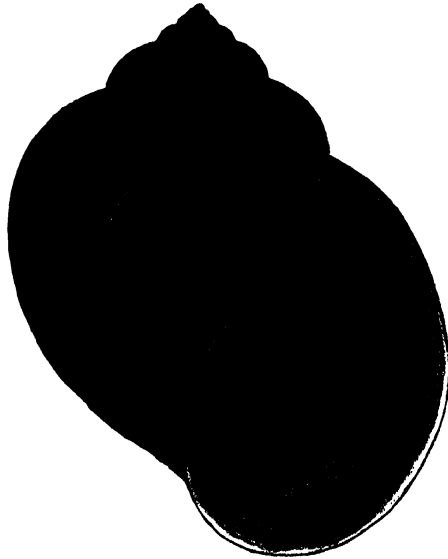
132b.



132a.



132c.



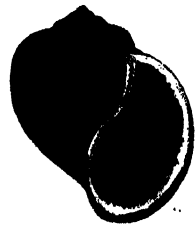
133



134a.



135



134b.

# AMPULLARIA.

## PLATE XXVI.

Species 122. (Fig. *a, b, c*, Mus. Cuming.)

AMPULLARIA ELEGANS. *Amp. testā turbinatā, solidā, viz umbilicatā, spirā subexsertā, anfractibus convexis, subangustis, prope suturam planatis, levibus; lutescente-albā, fasciis lineisque rubido-fuscis cingulatā; aperturā rotundato-ovatā, parviusculā, fauce albā.*

THE ELEGANT AMPULLARIA. Shell turbinated, solid, scarcely umbilicated, spire rather exserted, whorls convex, rather narrow, flattened next the suture, smooth; yellowish-white, encircled with red-brown bands and lines; aperture rotundately ovate, rather small, interior white.

D'ORBIGNY, Mag. de Zool. 1835, p. 33, Moll. Voy. dans l'Amér. Mérid. p. 378. pl. 52. f. 4 to 6.

Hab. Rio Madeira, Tributary of the Amazon, Bolivia; D'Orbigny.

This species chiefly differs from *A. Roissyi*, to which it is nearest allied, by its broader form of convolution, and in the more depressed growth of the whorls next the suture.

Species 123. (Mus. Cuming.)

AMPULLARIA GHIESBRECHTII. *Amp. testā globosā, solidiusculā, profundē umbilicatā, spirā parviusculā, depressā, apice acutā, anfractibus rotundatis, undique decussatim malleatis; intensē olivaceā; aperturā pyriformi-ovatā, labro effuso, vivide rubido-miniato.*

GHIESBRECHT'S AMPULLARIA. Shell globose, rather solid, deeply umbilicated, spire rather small, depressed, sharp at the apex, whorls rounded, everywhere decussately malleated; dark olive; aperture pyriformly ovate, lip effused, deep ruddy vermilion.

Hab. Province of Chiapas, Mexico; Ghiesbrecht.

A remarkably fine species, of solid globose form, cha-

racteristically malleated throughout, and having a conspicuous deep red aperture.

Species 124. (Fig. *a, b*, Mus. Cuming.)

AMPULLARIA FUMATA. *Amp. testā semiglobosā, obliquē effusā, angustē umbilicatā, spirā parvā, acutā, anfractibus convexis, levibus, ultimo nullō maximo; olivaceā, ad suturam fulvescente, lineis nigricantibus cingulatā; aperturā amplā, labro plano-expanso, fauce fumeo-fusco tinctā et lineatā.*

THE SMOKED AMPULLARIA. Shell semiglobose, obliquely effused, narrowly umbilicated, spire small, sharp, whorls convex, smooth, the last one much the largest; olive, fulvous at the suture, encircled with dark lines; aperture large, lip flatly expanded, interior stained and lined with smoky brown.

Hab. Province of Chiapas, Mexico; Ghiesbrecht.

Peculiarly distinguished by the flat expanded formation of the lip, and the painting of the interior, which is stained with shining smoky brown lines and tint.

Species 125. (Mus. Cuming.)

AMPULLARIA DIRA. *Amp. testā subglobosā, minulē angustē umbilicatā, anfractibus rotundatis, ad suturam planulatis, rudē striatis; olivaceo-nigricante; aperturā ovatā, labro simplici.*

THE DISMAL AMPULLARIA. Shell subglobose, minutely narrowly umbilicated, whorls rounded, rather flattened at the suture, rudely striated; olive-black; aperture ovate, lip simple.

Hab. —?

A dull rudely striated blackish-olive species, of the simplest form.









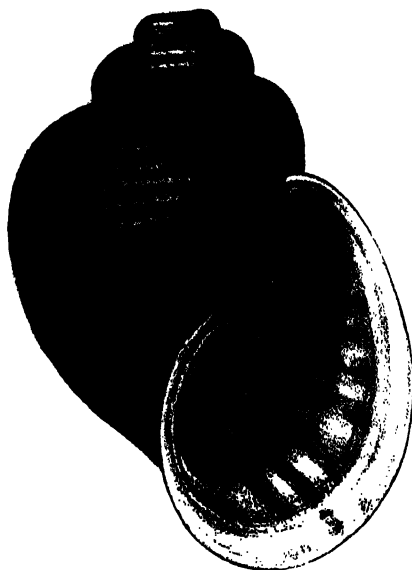
126



127a



127b.



128



129a.



129b.



130

# AMPULLARIA.

PLATE XXVII.

## Species 126. (Mus. Hanley.)

AMPULLARIA PLANORBULA. *Amp. testâ discoidâ, amplexiter umbilicatâ, spirâ brevi, subimmersâ, anfractibus angustis, convexis, levibus, ad suturam depressis; lutescente-albâ, fasciis lineisque castaneis cingulatâ; aperturâ lunato-circulari, labro simplici.*

THE LITTLE PLANORBIS AMPULLARIA. Shell discoid, largely umbilicated, spire short, subimmersed, whorls narrow, convex, smooth, depressed at the suture; yellowish-white, encircled with chestnut bands and lines; aperture lunar-circular, lip simple.

PHILIPPI, Kuster, Conch. Cab. *Amp.* p. 26. pl. 7. f. 3.

*Hab.* — ?

A small species, distinguished from all others of the genus by its discoid *Planorbis*-like growth.

## Species 127. (Fig. a, b, Mus. Cuming.)

AMPULLARIA DECUSSATA. *Amp. testâ subglobosâ, angustè profundè umbilicatâ, spirâ obtusâ, erosâ, anfractibus angustis, convexis, striis tenuè decussatis, ad suturam latè planatis; livido-castaneâ, lineis fulvescentibus cingulatâ, ad suturam fulvescente; aperturâ ovatâ, parviusculâ, labro simplici.*

THE DECUSSATED AMPULLARIA. Shell subglobose, narrowly deeply umbilicated, spire obtuse, eroded, whorls narrow, convex, finely decussated with striæ, broadly flattened at the suture; livid-chestnut, encircled with fulvous lines, fulvous at the suture; aperture ovate, rather small, lip simple.

MORICAND, Mem. Soc. Phys. de Genève, vol. vii. p. 445. pl. 2. f. 26, 27.

*Hab.* Brazil.

A rather narrowly convoluted shell, decussated throughout with fine striæ, especially characterized by a broad flattened development of the whorls next the suture.

## Species 128. (Mus. Hanley.)

AMPULLARIA SWAINSONI. *Amp. testâ oblongo-ovatâ, angustè profundè umbilicatâ, spirâ subexsertâ, anfractibus convexis, undique minutè punctulatis; lutescente-olivaceâ, fasciis numerosis angustis viridibus cingulatâ; aperturâ pyriformi-ovatâ, labro effuso, fauce albicante.*

SWAINSON'S AMPULLARIA. Shell oblong-ovate, narrowly deeply umbilicated, spire rather exserted, whorls convex, minutely punctured throughout; yellowish-olive, encircled with numerous narrow green bands; aperture pyriformly ovate, lip effused, interior whitish.

*Ampullaria fasciata*, Swainson, Zool. Illus. Second Series, vol. ii. pl. 64.

*Ampullaria Swainsoni*, Philippi.

*Hab.* — ?

Distinguished from its congeners by its bold oblong-ovate form of convolution and continuous encircling of narrow bands.

## Species 129. (Fig. a, b, Mus. Hanley.)

AMPULLARIA BALANOIDEA. *Amp. testâ ovatâ, solidâ, obtectè umbilicatâ, spirâ subexsertâ, obtusâ, anfractibus rotundatis, subangustis, tenuissimè granoso-striatis, ad suturam plano-declivibus; nigricante-castaneâ; aperturâ parviusculâ, ovatâ, labro effusâ, columellâ callosoreflexo, aurantio tinctâ.*

THE ACORN-LIKE AMPULLARIA. Shell ovate, solid, with a covered umbilicus, spire rather exserted, obtuse, whorls rounded, rather narrow, very finely granosely striated, flatly slanting at the suture; blackish-chestnut; aperture rather small, ovate, lip effused, columella callously reflected, orange-tinted.

GOULD, MS., Mus. Hanley.

*Hab.* Liberia, West Africa.

Very closely allied to *A. Plate* which follows, but of a more obliquely effused form, with a more exserted spire.

## Species 130. (Mus. Cuming.)

AMPULLARIA PLATÆ. *Amp. testâ ovatâ, solidiusculâ, imperforatâ, spirâ obtusè exsertâ, anfractibus subangustis, convexis, minutè granoso-striatis, ad suturam obtusè planatis; lutescente-castaneâ, fasciis angustis fuscis cingulatâ; aperturâ ovatâ, labro simplici, columellâ callosoreflexâ, aurantio-tinctâ.*

THE PLATE AMPULLARIA. Shell ovate, rather solid, imperforated, spire obtusely exserted, whorls rather narrow, convex, minutely granosely striated, obtusely flattened at the suture; yellowish-chestnut, encircled with narrow brown bands; aperture ovate, lip simple, columella callously reflected, orange-tinted.

*Helix Plate*, Maton, Trans. Linn. Soc. 1809, vol. x. pl. 24. f. 16, 17.

*Ampullaria Plate*, D'Orbigny.

*Ampullaria Naticoides*, D'Orbigny.

*Ampullaria cyclostoma*, Spix.

*Hab.* River Plate.

Distinguished from the preceding species, from Liberia, to which it is singularly closely allied, by its narrower form of convolution and banded painting.







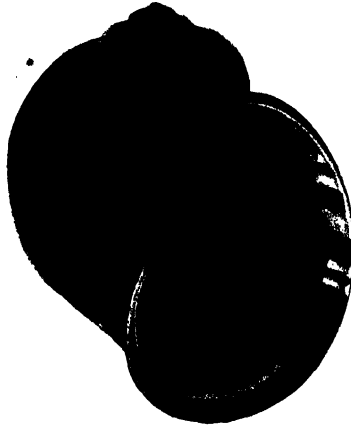
132 a.



133 a.



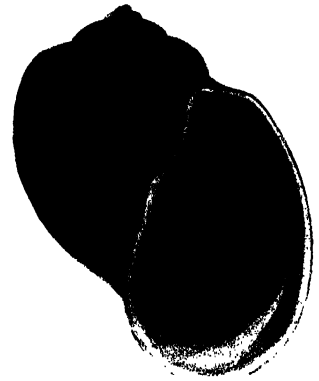
132 b.



134 a.



135 a.



135 b.



135 b.



134 a.



131 b.



134 b.

# AMPULLARIA.

PLATE XXVIII.

Species 131. (Fig. a, b, Mus. Cuming.)

AMPULLARIA AUROSTOMA. *Amp. testâ globoso-turbinatâ, vix umbilicatâ, spirâ subexsertâ, anfractibus rotundatis, rugoso-striatis; nigricante-castaneâ; aperturâ ovatâ, labro vividè aurantio-rufo.*

THE GOLDEN-MOUTH AMPULLARIA. Shell globosely turbinated, scarcely umbilicated, spire somewhat exerted, whorls rounded, roughly striated; blackish-chestnut; aperture ovate, lip bright orange-red.

LEA, MS., Mus. Cuming.

A globosely turbinated shell of solid structure and dark chestnut colour, with a pretty bright or

THE EAR-SHAPED AMPULLARIA. Shell compressly ovate, obliquely twisted, *Lymnaea*-shaped, thin, deeply umbilicated, spire small, whorls convex, striated and malleated, obsolete and obtusely angled round the upper part, last whorl conspicuously effused; dark olive; aperture triangularly ovate, rotundately expanded at the base, bluish.

Hab. Honduras.

The form of this species is quite peculiar, the last whorl being unusually obliquely effused, more particularly towards the base.

Species 134. (Fig. a, b, Mus. Cuming.)

AMPULLARIA NUX. *Amp. testâ oblongo-conoideâ, solidâ, vix umbilicatâ, spirâ obtusè exsertâ, anfractibus convexis, ad suturam declivibus et obsolete plicato-corrugatis; fulvo-castaneâ; aperturâ ovatâ, parviusculâ, labro columellari calloso-reflexo.*

THE NUT AMPULLARIA. Shell oblong-conoid, solid, scarcely umbilicated, spire obtusely exerted, whorls convex, slanting and obsolete plicately wrinkled at the suture; fulvous-chestnut; aperture ovate, rather small, columellar lip callously reflected.

Hab. Bombay.

A solid fulvous-chestnut shell of an oblong-conoid form, with the columellar lip rather unusually callously reflected.

AMPULLARIA SPRUCEI. *Amp. testâ oblongo-conoideâ, solidâ, imperforatâ, spirâ plus minus erodâ, anfractibus declivi-concexis, levibus, haud nitentibus; fulvo-olivaceâ, prope aperturam obscure rufo-fasciatâ; aperturâ ovatâ, parviusculâ, labro effuso, columellâ densè callosâ.*

SPRUCE'S AMPULLARIA. Shell oblong-conoid, solid, imperforated, spire more or less eroded, whorls convex, smooth, not shining; faintly red-banded near the aperture; aperture rather small, lip effused, columella thickly callous.

Hab. Tarapacá, east side of the Andes; Spruce.

This species has a peculiar solid *Littorina*-like aspect, with the columellar lip callously reflected over the place of the umbilicus.

Species 133. (Fig. a, b, Mus. Cuming.)

AMPULLARIA AURIFORMIS. *Amp. testâ compressâ, obliquè contortâ, Lymnaea-formi, tenui, profundè umbilicatâ, spirâ parvâ, anfractibus convexis, striatis et malleatis, superne obsolete obtusè angulatis, anfractibus ultimo conspicuè effuso; intensè olivaceâ; aperturâ trigono-ovatâ, basi rotundato-expansâ, caerulecente.*

Fig. 133. (Mus. De Burgh.)

The foregoing shell has been selected from the collection of De Burgh, for the sake of giving a characteristic illustration of *A. zonata* of Spix than representing at Pl. XII.





# AMPULLARIA.

	Species		Plate	Species
<i>adusta</i> , <i>Reeve</i> . . . . .	III. 11	<i>filosa</i> , <i>Reeve</i> . . . . .	XIX. 88	
<i>Amazonica</i> , <i>Reeve</i> . . . . .	XII. 55	<i>flattilis</i> , <i>Reeve</i> . . . . .	VII. 31	
<i>ampullacea</i> ( <i>Helix</i> ), <i>Linn.</i> . . . .	X. 48	<i>fumata</i> , <i>Reeve</i> . . . . .	XXVI. 124	
<i>aperta</i> , <i>Philippi</i> . . . . .	XIX. 90	<i>Ghiesbreehtii</i> , <i>Reeve</i> . . . . .	XXVI. 123	
<i>auriformis</i> , <i>Reeve</i> . . . . .	XXVIII. 133	<i>gigas</i> , <i>Spix</i> . . . . .	I. 3	
<i>aurostoma</i> , <i>Lea</i> . . . . .	XXVIII. 131	<i>glauca</i> ( <i>Helix</i> ), <i>Linn.</i> . . . .	XVIII. 85	
<i>balanoides</i> , <i>Gould</i> . . . . .	XXVII. 129	<i>globosa</i> , <i>Swainson</i> . . . . .	X. 46	
<i>balteata</i> , <i>Philippi</i> . . . . .	XVIII. 84	<i>Gossei</i> , <i>Reeve</i> . . . . .	XX. 93	
<i>bilineata</i> , <i>Reeve</i> . . . . .	XXIII. 110	<i>Guyanaensis</i> , <i>Guérin</i> . . . . .	XVIII. 85	
<i>bulli</i> , <i>Reeve</i> . . . . .	XXII. 104	<i>hemastoma</i> , <i>Reeve</i> . . . . .	VII. 34	
<i>Bridgesii</i> , <i>Reeve</i> . . . . .	XI. 50	<i>Hanleyi</i> , <i>Reeve</i> . . . . .	XXIII. 113	
<i>Brownii</i> , <i>Jay</i> . . . . .	I. 5	<i>haustum</i> , <i>Reeve</i> . . . . .	V. 23	
<i>buxea</i> , <i>Reeve</i> . . . . .	XXIII. 112	<i>hepataria</i> , <i>Reeve</i> . . . . .	XVII. 77	
<i>caliginosa</i> , <i>Reeve</i> . . . . .	XXV. 118	<i>Hondurascensis</i> , <i>Reeve</i> . . . . .	III. 15	
<i>canaliculata</i> , <i>Lamarck</i> . . . . .	XVII. 79	<i>Hopetonensis</i> , <i>Lea</i> . . . . .	XIII. 60	
<i>carinata</i> , <i>Swainson</i> . . . . .	XIII. 58	<i>immersa</i> , <i>Reeve</i> . . . . .	XI. 52	
<i>Cassidiformis</i> , <i>Reeve</i> . . . . .	XII. 56	<i>insularum</i> , <i>D'Orbigny</i> . . . . .	IX. 42	
<i>Celebensis</i> , <i>Quoy</i> . . . . .	X. 48	<i>intropicta</i> , <i>Reeve</i> . . . . .	XXI. 101	
<i>cerasum</i> , <i>Hanley</i> . . . . .	XXI. 99	<i>Javanica</i> , <i>Reeve</i> . . . . .	XX. 96	
<i>cinctea</i> , <i>Reeve</i> . . . . .	XX. 94	<i>labiosa</i> , <i>Koch</i> . . . . .	XVI. 74	
<i>citreum</i> , <i>Reeve</i> . . . . .	XXIV. 116	<i>Largillierii</i> , <i>Philippi</i> . . . . .	XXIII. 109	
<i>Columbiensis</i> , <i>Sowerby</i> . . . . .	V. 25	<i>Lattrei</i> , <i>Reeve</i> . . . . .	V. 22	
<i>compacta</i> , <i>Reeve</i> . . . . .	XIV. 62	<i>Layardi</i> , <i>Reeve</i> . . . . .	VI. 27	
<i>complicata</i> , <i>Reeve</i> . . . . .	XIX. 89	<i>leucostoma</i> , <i>Swainson</i> . . . . .	IV. 18	
<i>conica</i> , <i>Wood</i> . . . . .	II. 10	<i>Linnei</i> , <i>Philippi</i> . . . . .	XXIV. 115	
<i>cornucopia</i> , <i>Reeve</i> . . . . .	I. 4	<i>livescens</i> , <i>Reeve</i> . . . . .	V. 21	
<i>corrugata</i> , <i>Swainson</i> . . . . .	X. 46	<i>lubrica</i> , <i>Reeve</i> . . . . .	XIII. 61	
<i>crassa</i> , <i>Swainson</i> . . . . .	I. 5	<i>lutcostoma</i> , <i>Swainson</i> . . . . .	XVIII. 84	
<i>Cubensis</i> , <i>Reeve</i> . . . . .	XVIII. 83	<i>Luzonica</i> , <i>Reeve</i> . . . . .	VI. 26	
<i>Cumingii</i> , <i>King</i> . . . . .	XVII. 81	<i>Lymnaeiformis</i> , <i>Reeve</i> . . . . .	VIII. 39	
<i>cyclostoma</i> , <i>Spix</i> . . . . .	XXVII. 130	<i>maista</i> , <i>Reeve</i> . . . . .	XX. 92	
<i>cuprina</i> , <i>Reeve</i> . . . . .	I. 1	<i>magnifica</i> , <i>Dunker</i> . . . . .	X. 48	
<i>decussata</i> , <i>Moricand</i> . . . . .	XXVII. 127	<i>Malabarica</i> , <i>Philippi</i> . . . . .	XV. 67	
<i>depressa</i> , <i>Say</i> . . . . .	XXIII. 111	<i>malleata</i> , <i>Jonas</i> . . . . .	VII. 32	
<i>dira</i> , <i>Reeve</i> . . . . .	XXVI. 125	<i>maura</i> , <i>Reeve</i> . . . . .	XIII. 57	
<i>Dolioides</i> , <i>Reeve</i> . . . . .	XVI. 75	<i>megastoma</i> , <i>Sowerby</i> . . . . .	III. 13	
<i>dotium</i> , <i>Philippi</i> . . . . .	IV. 18	<i>melanocheila</i> , <i>Reeve</i> . . . . .	V. 24	
<i>Dysoni</i> , <i>Hanley</i> . . . . .	XI. 49	<i>Metcalfei</i> , <i>Reeve</i> . . . . .	XXV. 119	
<i>effusa</i> , <i>Swainson</i> . . . . .	XVIII. 85	<i>mittocheilus</i> , <i>Reeve</i> . . . . .	XXV. 120	
<i>electrina</i> , <i>Reeve</i> . . . . .	XX. 95	<i>Naticoides</i> , <i>D'Orbigny</i> . . . . .	XXVII. 130	
<i>elegans</i> , <i>D'Orbigny</i> . . . . .	XXVI. 122	<i>neritina</i> , <i>Gmelin</i> . . . . .	XVIII. 85	
<i>encaustica</i> , <i>Reeve</i> . . . . .	XVI. 76	<i>Neritoides</i> , <i>D'Orbigny</i> . . . . .	III. 13	
<i>erythrostoma</i> , <i>Reeve</i> . . . . .	XIII. 59	<i>nobilis</i> , <i>Reeve</i> . . . . .	II. 8	
<i>fasciata</i> , <i>Reeve</i> . . . . .	IX. 41	<i>notabilis</i> , <i>Reeve</i> . . . . .	XIV. 63	
<i>fasciata</i> , <i>Lamarck</i> . . . . .	X. 48	<i>nubila</i> , <i>Reeve</i> . . . . .	XIV. 65	
<i>fasciata</i> , <i>Swainson</i> . . . . .	XXVII. 128	<i>nux</i> , <i>Reeve</i> . . . . .	XXVII. 132	
<i>figulina</i> , <i>Spix</i> . . . . .	II. 6	<i>oblonga</i> , <i>Swainson</i> . . . . .	XV. 70	

# AMPULLARIA.—INDEX.

	Plate	Species		Plate	Species
<i>olen, Reeve</i> . . . . .	XXI.	102	<i>rugosa, Lamarek</i> . . . . .	IV.	18
<i>olivacea, Spix</i> . . . . .	VIII.	38	<i>saxea, Reeve</i> . . . . .	XXII.	108
<i>Olivieri, Deshayes</i> . . . . .	I.	5	<i>scalaris, D'Orbigny</i> . . . . .	XVI.	79
<i>Oronocensis, Ziegler</i> . . . . .	X.	45	<i>simplex, Reeve</i> . . . . .	XXI.	98
<i>ovata, Olivier</i> . . . . .	XIV.	64	<i>sordida, Swainson</i> . . . . .	III.	14
<i>pachystoma, Philippi</i> . . . . .	XVIII.	84	<i>speciosa, Philippi</i> . . . . .	VII.	33
<i>pachystoma, Benson</i> . . . . .	X.	46	<i>Spixii, D'Orbigny</i> . . . . .	I.	2
<i>Paludinoides, Christofori</i> . . . . .	II.	9	<i>Sprucci, Reeve</i> . . . . .	XXVIII.	134
<i>papyracea, Spix</i> . . . . .	IX.	44	<i>Sumatrensis, Philippi</i> . . . . .	X.	48
<i>patula, Reeve</i> . . . . .	XXI.	100	<i>Swainsoni, Philippi</i> . . . . .	XXVII.	128
<i>Pernambucensis, Reeve</i> . . . . .	XXII.	103	<i>teres, Philippi</i> . . . . .	XXI.	97
<i>Physoides, Reeve</i> . . . . .	XXII.	107	<i>testudinea, Reeve</i> . . . . .	XXIV.	114
<i>picta, Reeve</i> . . . . .	XXIV.	117	<i>trochulus, Reeve</i> . . . . .	XIV.	66
<i>pilula, Reeve</i> . . . . .	III.	12	<i>Turbinoides, Reeve</i> . . . . .	VIII.	37
<i>planorbula, Philippi</i> . . . . .	XXVII.	126	<i>urceus (Nerita), Müller</i> . . . . .	IV.	18
<i>Plataë (Helix), Maton</i> . . . . .	XXVII.	130	<i>venetus, Reeve</i> . . . . .	IV.	17
<i>polita, Deshayes</i> . . . . .	VII.	35	<i>vermiformis, Reeve</i> . . . . .	XII.	54
<i>porphyrostoma, Reeve</i> . . . . .	VI.	30	<i>vexillum, Reeve</i> . . . . .	IV.	20
<i>producta, Reeve</i> . . . . .	XV.	68	<i>virescens, Deshayes</i> . . . . .	VII.	35
<i>prunulum, Reeve</i> . . . . .	XVIII.	82	<i>vittata, Reeve</i> . . . . .	XVII.	78
<i>puncticulata, Swainson</i> . . . . .	IV.	19	<i>vitrea (Helix), Born.</i> . . . . .	XVII.	80
<i>reflexa, Swainson</i> . . . . .	XV.	69	<i>Yatesii, Reeve</i> . . . . .	VI.	28
<i>Roissyi, D'Orbigny</i> . . . . .	XXII.	105	<i>zonata, Spix</i> . . . . .	XII.	53
<i>rufilineata, Reeve</i> . . . . .	II.	7			

## ERRATA.

- Pl. IV. Sp. 16. For *A. autumnalis* read *A. sordida* var.  
Pl. V. Sp. 24. For *A. melanocheila* read *A. sordida* var.

MONOGRAPH  
OF THE GENUS  
C A N C E L L A R I A.

“There is a pleasure in the pathless woods,  
There is a rapture in the lonely shore,  
There is society, where none intrudes,  
By the deep Sea, and music in its roar ;  
I love not Man the less, but Nature more.”--*Byron*







1a.



2b.



3.



2a.



4a.



4b.



1b.

# CANCELLARIA.

## PLATE I.

### Genus CANCELLARIA, Lamarck.

*Testa ovata seu fusiformis, interdum levigata, sæpius dense reticulata, interdum imperforata, plerumque ampliter profundè umbilicata, spiræ suturâ plerumque plus minus latè angulato-æcavata; columellâ bi-tri-plicatâ, plicis plerumque validibus, versùs basin minoribus, basi nonnumquam posticè recurvâ; aperturâ ovatâ, faucè plus minus validè liratâ, labro interdum serrato. Operculum nullum.*

Shell ovate or fusiform, sometimes smooth, mostly elaborately reticulated, sometimes imperforated, generally largely deeply umbilicated, suture of the spire generally more or less broadly angularly excavated; columella two-three-plaited, plaits mostly strong, smaller towards the base, base sometimes recurved posteriorly; aperture ovate, interior more or less strongly ridged, lip sometimes serrated. No operculum.

This very beautiful genus, which has risen greatly in the estimation of connoisseurs during the last few years, owing to the comparative rarity of the species and to their very elegant varieties of convolution and sculpture, and our acquaintance with which is chiefly due to the researches of Mr. Cuming and Sir Edward Belcher, and to the beautiful monograph in the 'Thesaurus Conchyliorum' of Mr. Sowerby, occupies a somewhat anomalous position in the system. The shells of the *Cancellarie*, with all the characteristics of those of a carnivorous race of molluscs, such as solid testaceous substance, enanelled apertures, and elaborately latticed sculpture, allied, too, in general aspect to the more voracious of the class, are nevertheless, according to the observations of M. Deshayes upon one of the most typical of the genus, the *C. cancellata* of the Mediterranean, a tribe of vegetable feeders unprovided with any operculum.

Apart from the main generic character of the group, namely, the plaits of the columella, the species are singularly unlike in generic aspect. In *C. bulbulus* and *pyrum*, for example, we have a heavy subglobular shell without any sculpture at all, while in *C. crenifera*, *lamellosa*, and others we have sculpture of the most elaborate kind; and whilst in the former of these the whorls are so closely convoluted as to leave the columella, or axial pillar, imperforated, in the latter, and especially in that marvellous species the *C. trigonostoma*, the pillar is formed round an umbilicus which penetrates inwardly nearly to the apex.

Little more than half-a-dozen species were known to Lamarck. It is to the deep-sea dredgings of Mr. Cuming, reaching from seven to forty fathoms off the shores of Central America and the Philippine Islands, that we are chiefly indebted to the magnificent series figured in this monograph, forming the pride of his collection, and there appears small probability of their being much added to.

### Species 1. (Fig. a, b, Mus. Cuming.)

CANCELLARIA CUMINGIANA. *Can. testâ oblongo-ovatâ, ad basin attenuatâ, subumbilicatâ, spirâ breviusculâ, obtusâ, rudè obliquè convolutâ, anfractibus ad suturam canaliculatis, deinde rotundatis, undique angustè sulcalis et liris; spalisco-fuscâ; aperturâ ovatâ, plicis tribus, infimâ ferè obsoletâ.*

CUMING'S CANCELLARIA. Shell oblong-ovate, attenuated at the base, slightly umbilicated, spire rather short, obtuse, rudely obliquely convoluted, whorls channelled at the suture, then rounded, everywhere narrowly grooved and ridged; fawn-brown; aperture ovate, plaits three, the lowest almost obsolete.

PETIT, Guérin's Mag. de Zool.

Hab. — ?

This remarkable species is chiefly distinguished by its obtuse form and rude oblique plan of convolution; the surface is moreover sculptured throughout with narrow excavated grooves, the intermediate ridges being equally narrow, and sometimes faintly linearly grooved in the centre.

### Species 2. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SOLIDA. *Can. testâ ovato-globosâ, crassâ, solidâ, ad basin concavo-canaliculatâ, imperforatâ, spirâ brevissimâ, suturâ impressâ, anfractibus prope apicem decussatim liris, deinde levibus; aperturâ subangustâ, faucè liratâ, plicis duabus, superiori angustâ, prominente; aurantio-spaldicâ, intus albâ.*

THE SOLID CANCELLARIA. Shell ovately globose, thick, solid, concavely channelled at the base, imperforated, spire very short, suture impressed, whorls decussately ridged near the apex, then smooth; aperture rather narrow, interior ridged, plaits two, the upper narrow, prominent; orange-fawn, interior white.



# CANCELLARIA.—PLATE I.

SOWERBY, Pro. Zool. Soc. 1832, p. 52.

*Hab.* Real Llejos, Central America; Cuming. "

A very solid globose shell, concavely channelled round the columella on a level with the upper plait, without any indication of external sculpture except near the apex.

## Species 3. (Mus. Cuming.)

CANCELLARIA RETICULATA. *Can. testā oblongo-turbinatā, imperforatā, solidā, spirā exsertā, anfractibus convexis, undiquē obtusē reticulatā; albidā, rufo-fusco fasciatā, variegatā; aperturā subangustē ovalā, fauce validē liratā, plicis duabus, valdē prominentibus.*

THE RETICULATED CANCELLARIA. Shell oblong-turbinated, imperforated, solid, spire exserted, whorls convex, everywhere obtusely reticulated; whitish, banded and variegated with red-brown; aperture rather narrowly ovate, interior strongly ridged, plaits two, very prominent.

*Voluta reticulata*, Linnaeus, Syst. Nat. (12th edit.) p. 1190.

*Cancellaria reticulata*, Lamarek.

*Hab.* West Indies.

This fine old Linnæan species may be recognized as the original type of the genus.

## Species 4. (Fig. a, b, Mus. Cuming.)

CANCELLARIA ACUMINATA. *Can. testā oblongo-ovalā, solidā, imperforatā, spirā exsertā, acutissimā, anfractibus obsoletē planiliratis, prope apicem decussatim costatis; albidā, rufo-fusco fasciatā, et nebulatā; aperturā angustā oblongā, fauce validē liratā, plicis tribus, supremā distante, prominente.*

THE POINTED CANCELLARIA. Shell oblong-ovate, solid, imperforated, spire exserted, very sharp-pointed, whorls convex, obsoletely flatly ridged, decussately ribbed near the apex; whitish, banded and clouded with red-brown; aperture narrowly oblong, interior strongly ridged, plaits three, the uppermost distant, prominent.

SOWERBY, Pro. Zool. Soc. 1832, p. 53.

*Hab.* Guacomayo, Central America (dredged in sandy mud at a depth of twelve fathoms); Cuming.

Distinguished from the preceding species by its more compact oblong form and acuminate spire, encircled with flattened ridges which are almost obsolete.





6a.



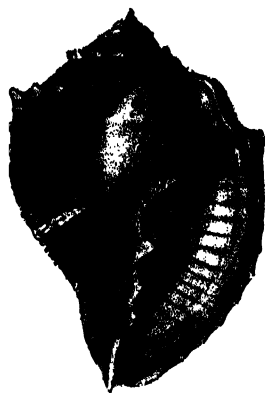
5a.



6b.



7.



8a.



8b.



5b.

# CANCELLARIA.

## PLATE II.

Species 5. (Fig. a, b, Mus. Cuming.)

CANCELLARIA BULLATA. *Can. testā ovato-conoidē, tenui, inflatā, ampliter profundē umbilicatā, spirā exsertā, turrītā, anfractibus supernē latē impresso-canaliculatis, ad angulum rudē obliquē nodulatis, deinde convexis, obtusē rugoso-liratis et striatis; sordidē fulvā; aperturā trigono-ovalā, basi sinuatā, labro columellari latē reflexo, plicis duabus, parvis.*

THE BUBBLE-LIKE CANCELLARIA. Shell ovately conoid, thin, inflated, largely deeply umbilicated, spire exserted, turreted, whorls broadly impressly channelled round the upper part, rudely obliquely noduled at the angle, then convex, obtusely wrinkle-ridged and striated; dirty fulvous; aperture triangular-ovate, sinuated at the base, columellar lip broadly reflected, plaits two, small.

SOWERBY, Pro. Zool. Soc. 1832, p. 51.

*Hab.* Gulf of Nicoya, Central America (from a muddy bottom in twelve fathoms); Cuming.

Distinguished chiefly by its light inflated growth and large excavated umbilicus.

Species 6. (Fig. a, b, Mus. Cuming.)

CANCELLARIA NODULIFERA. *Can. testā ovato-ventricosā, subpyriformi, imperforatā, basi contorto-recurvā, spirā turrītā, anfractibus supernē excavato-canaliculatis, deinde convexis, longitudinaliter obliquē costatis, liris angustis nodulatis confertim spirāliter decussatis; luteo-fulvescente, fasciā angustā albidā versus basin cingulatā; aperturā pyriformi-ovalā, plicis duabus, minutis.*

THE NODULED CANCELLARIA. Shell ovately ventricose, somewhat pear-shaped, imperforated, twistedly recurved at the base, spire turreted, whorls excavately channelled at the upper part, then convex, longitudinally obliquely ribbed, closely spirally decussated with narrow noduled ridges; yellowish-brown, encircled with a narrow whitish band towards the base; aperture pyriformly ovate, plaits two, very small.

SOWERBY, Tankerville Catalogue, Appendix, p. 15.

\* *Cancellaria imperialis*, Michelin.

*Hab.* Japan.

The whorls of this species are rather broadly excavately channelled as in the preceding, but at the base they are closely convoluted into a twisted recurved extremity, ; no trace of an umbilicus.

Species 7. (Mus. Cuming.)

CANCELLARIA OBESA. *Can. testā ovalā, crassā, ponderosā, imperforatā, spirā breviusculā, acuminatā, anfractibus convexis, supernē declivibus, levibus, obscurē spirāliter striatis versus apicem, minutē reticulatis; albidā, aurantio-fusco pallidē nebulatā; aperturā oblongā, subangustā, supernē sinuatā, fauce validissimē liratā, plicis duabus, crassissimis, prominentibus.*

THE STOUT CANCELLARIA. Shell ovate, thick, ponderous, imperforated, spire rather short, acuminate, whorls convex, slanting at the upper part, smooth, obscurely spirally striated towards the apex, minutely reticulated; whitish, faintly clouded with orange-brown; aperture oblong, rather narrow, sinuated at the upper part, interior very strongly ridged, plaits two, very thick, prominent.

SOWERBY, Pro. Zool. Soc. 1832, p. 52.

*Hab.* Gulf of Dulce, Central America (dredged from the depth of fifteen fathoms); Cuming.

This fine species, of which two specimens in a young state were brought to Mr. Cuming from Puerto Potrero, is distinguished by its obtuse growth and prominently developed columellar plaits, the surface of the last whorl being smooth, whilst the earlier whorls are finely reticulated.

Species 8. (Fig. a, b, Mus. Cuming.)

CANCELLARIA CASSIDIFORMIS. *Can. testā ovato-ventricosā, pyriformi, imperforatā, spirā brevi, acuminatā, anfractibus spirāliter rugoso-striatis, ad suturam profundē angustē canaliculatis, deinde concavis et nodoso-angulatis, nodis submuricatis; aurantio-fulvā; aperturā oblongo-ovalā, subamplā, labro columellari recurvo, latē expanso, plicis duabus, acutis.*

THE CASSIS-SHAPED CANCELLARIA. Shell ovately ventricose, pear-shaped, imperforated, spire short, acuminate, whorls spirally wrinkle-ridged, deeply narrowly channelled at the suture, then concave and nodosely angled, nodules rather prickly; orange-fulvous; aperture oblong, rather large, columellar lip recurved, widely spread, plaits two, sharp.

SOWERBY, Pro. Zool. Soc. 1832, p. 53.

*Hab.* Panama (young specimens dredged from a sandy muddy bottom, at the depth of sixteen fathoms); Cuming.

Allied to *C. nodulifera*, but differing by its more bulbous inflated proportions, less twistedly recurved base, and less exserted spire.







10a.



9a.



10b.



12a.



11a.



12b.



13a.



11b.



13b.



9b.

# CANCELLARIA.

## PLATE III.

Species 9. (Fig. a, b, Mus. Cuming.)

CANCELLARIA UNDULATA. *Can. testā subangustē turratā, imperforatā, spirā acutē acuminatā, anfractibus spirāliter lineari-sulcatis, longitudinaliter costatis, supernē planulatis, costis ad angulum subnodatis; fulvo-spaldicē, obscurē fasciatā; aperturā parvā, plicis duabus minutis.*

THE WAVED CANCELLARIA. Shell rather narrowly turreted, imperforated, spire sharply acuminate, whorls spirally linearly grooved, longitudinally ribbed, rather flattened at the upper part, ribs faintly noded at the angle; fulvous-fawn, obscurely banded; aperture small, plaits two, very small.

SOWERBY, Pro. Zool. Soc. 1848, p. 136.

Hab. Tasmania.

Of an erect sharply turreted form, ribbed throughout, the ribs being somewhat distant and slightly obliquely waved.

Species 10. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SIMILARIS. *Can. testā compressē ovatā, minutē umbilicatā, basi contortā, spirā breviusculā, acuminatā, anfractibus subplanulato-convexis, hic illic varicosis, obliquē undato-costatis, funiculis spiralibus elegantē cancellatis; cærulescente-albā, rufo-fusco fasciatā; aperturā parvā, fauce validē liratā, plicis tribus, acutis.*

THE SIMILAR CANCELLARIA. Shell compressly ovate, minutely umbilicated, twisted at the base, spire short, acuminate, whorls rather flatly convex, here and there varicose, obliquely wave-ribbed, elegantly cancellated with spiral cords; bluish-white, banded with red-brown; aperture small, interior strongly ridged, plaits three, sharp.

SOWERBY, Conchological Illustrations, No. 41. f. 38.

Hab.

Of precisely the same typical character as *C. cancellata*, from which species it differs specifically by its uniformly smaller size and finer sculpture.

Species 11. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SPENGLEBIANA. *Can. testā fusiformi-turratā, imperforatā, spirā acutē exsertā, anfractibus longitudinaliter obliquē costatis, spirāliter lineari-sulcatis, supernē declivi-angulatis, costis ad angulum nodatis; fulvā, rufo-maculatā; aperturā parviusculā, plicis tribus, mediocribus.*

SPENGLEE'S CANCELLARIA. Shell fusiformly turreted, imperforated, spire sharply exserted, whorls longitudinally obliquely ribbed, spirally linearly grooved,

slantingly angled at the upper part, ribs noded at the angle; fulvous, blotched with red; aperture rather small, plaits three, moderate.

DESHAYES, Encyclopédie Méthodique, *Pers.*, vol. ii. p. 185.

*Cancellaria Tritonis*, Sowerby.

Hab. Cagayan, Island of Mindanao, Philippines.

A fine solid angularly ribbed species, of bright fulvous colour, splashed with red.

Species 12. (Fig. a, b, Mus. Cuming.)

CANCELLARIA ELEGANS. *Can. testā fusiformi-ovatā, crassā, imperforatā, spirā conoideo-acuminatā, anfractibus plano-convexis, undique elegantē granoso-reticulatis, ad suturam angustē angulatis; albida, rufo-spaldico fasciatā et variegatā; aperturā parviusculā, plicis tribus, mediocribus.*

THE ELEGANT CANCELLARIA. Shell fusiformly ovate, thick, imperforated, spire conoidly acuminate, whorls flatly convex, everywhere elegantly granosely reticulated, narrowly angled at the suture; whitish, banded and variegated with reddish-fawn; aperture rather small, plaits three, moderate.

SOWERBY, Genera of Shells, f. 3.

Hab. Island of Ticao, Philippines (dredged from sandy mud, at the depth of six fathoms); Cuming.

This fine species differs from the *C. asperella*, to which M. Deshayes refers it, in being of a more acuminately fusiform growth, more elegantly sculptured, and in not being excavately channelled at the suture.

Species 13. (Fig. a, b, Mus. Cuming.)

CANCELLARIA CANCELLATA. *Can. testā compressē ovatā, subfusiformi, imperforatā, hic illic varicosā, basi contortā, spirā breviusculā, acutā, anfractibus convexis, obliquē costatis, liris angustis spiralibus cancellatis; albida, fusco variegatā, funiculis duabus castaneis cingulatā; aperturā parvā, fauce validē liratā, plicis tribus, prominentibus.*

THE CANCELLATED CANCELLARIA. Shell compressly ovate, somewhat fusiform, imperforated, here and there varicose, twisted at the base, spire rather short, sharp, whorls convex, obliquely ribbed, cancellated with narrow spiral ridges; whitish, variegated with brown, encircled with two chestnut bands; aperture small, interior strongly ridged, plaits three, prominent.

*Voluta cancellata*, Linnæus, Syst. Nat. (12th edit.) p. 1191.

*Cancellaria cancellata*, Lamarck.

Hab. Mouth of the Gambia, West Africa.

This well-known species partakes largely of the character of certain species of *Triton*.









15a.



16a.



15b.



16a.



17a.



16b.



17b.



18a.



18b.



18b.

# CANCELLARIA.

## PLATE IV.

Species 14. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA PYRUM.** *Can. testā ovato-pyriformi, solidā, imperforatā, spirā brevissimā, subimmersā, validē cancellatā, anfractu ultimo rotundato, lævi, ad basin striatā; fulvo-fuscescente; aperturā oblongā, angustā, columellā supernè latè callosā, ad basin granoso-corrugatā, plicis tribus, supremā acutā, prominente.*

**THE PEAR CANCELLARIA.** Shell ovately pyriform, solid, imperforated, spire very short, slightly immersed, strongly cancellated, last whorl rounded, smooth, striated at the base; fulvous-brown; aperture oblong, narrow, columella broadly callous at the upper part, granuously wrinkled at the base, plaits three, the uppermost sharp and prominent.

ADAMS and REEVE, Zool. Voy. Samarang, Moll. p. 42. pl. 10. f. 16.

*Hab.* China Sea.

A solid pear-shaped bulb-like species, closely allied to *C. bulbulus*, but of a distinct general form.

Species 15. (Fig. 15 a, b, and 16 a, b, Mus. Cuming.)

**CANCELLARIA BUCCINOIDES.** *Can. testā fusiformi-oblongā, imperforatā, spirā acutè turratā, anfractibus convexis, supernè angustè angulatis, costis longitudinalibus nodosis obliquis lirisque latis spiralibus undique rudè decussatis; livido-carneā aut fuscā, obscurè fasciatā; aperturā ovatā, supernè sinuatā, plicis duabus, mediocribus.*

**THE BUCCINUM-LIKE CANCELLARIA.** Shell fusiformly oblong, imperforated, spire sharply turreted, whorls convex, narrowly angled at the upper part, rudely decussated throughout with oblique longitudinal nodose ribs, and broad spiral ridges; livid flesh-colour or brown, obscurely banded; aperture ovate, sinuated at the upper part, plaits two, moderate.

SOWERBY, Pro. Zool. Soc. 1832, p. 54.

*Hab.* Real Llejos, Iquiqui, Callao, Puerto Potrero, Central America (dredged from a sandy muddy bottom, in from seven to fifteen fathoms); Cuming.

This species varies considerably in colour, but is always distinguished by the same characteristic rudely decussated sculpture.

Species 17. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA ASPERELLA.** *Can. testā oblongo-ovatā, imperforatā, spirā exertā, anfractibus convexis, ad suturam angustè excavatis, liris striisque scabris, rudè decussatis; rufescente-fuscā, obscurè fasciatā; aperturā ovatā, columellā arcuatā, plicis tribus, fortiusculis.*

**THE RASP CANCELLARIA.** Shell oblong-ovate, imperforated, spire exerted, whorls convex, narrowly excavated at the suture, rudely decussated with rough ridges and striae; reddish-brown, obscurely banded; aperture ovate, columella arched, plaits three, rather strong.

LAMARCK, Anim. sans vert. vol. ix. p. 402.

*Hab.* Baclayon, Island of Bohol, Philippines (dredged from the depth of seventeen fathoms); Cuming.

In external aspect this species reminds one of the *Purpura lapillus*, so far as regards its general form. The surface is peculiarly fretted with scabrous striae.

Species 18. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA OVATA.** *Can. testā subgloboso-ovatā, solidā, ponderosā, imperforatā, spirā brevissimā, acutè acuminatā, anfractibus plano-convexis, spiraliter linearisulcatis, supernè subcorrugatis, verius apicem reticulatis; rufescente-fuscā; aperturā subangustā, fauce validè liratā, plicis duabus, prominentibus.*

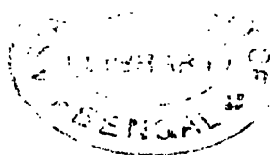
**THE OVATE CANCELLARIA.** Shell subglobosely ovate, solid, heavy, imperforated, spire very short, sharply acuminate, whorls flatly convex, spirally linearly grooved, somewhat wrinkled at the upper part, reticulated towards the apex; red-brown; aperture rather narrow, interior strongly ridged, plaits two, prominent.

SOWERBY, Pro. Zool. Soc. 1832, p. 53.

*Hab.* St. Elena, West Columbia (dredged from a sandy bottom, in eight to ten fathoms); Cuming.

Allied to *C. reticulata* and *acuminata*, but fully distinguished by its more solid obese form and smooth exterior.







20a.



19a.



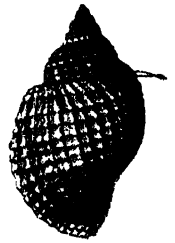
20b.



21a.



22a.



22b.



21b.



23a.



23b.



19b.

# CANCELLARIA.

## PLATE V.

### Species 19. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SCALATA. *Can. testâ subpyramidalî, minulâ umbilicatâ, spirâ exsertâ, anfractibus ad suturam impresso-excavatis, undique densè concentricè costatis, costis subtiliter nodulatis; roseo-spadiceâ, nodulis albidis; aperturâ parvâ, plicis tribus, parvis.*

THE STAIRCASE CANCELLARIA. Shell subpyramidal, minutely umbilicated, spire exserted, whorls impressly excavated at the suture, closely concentrically ribbed throughout, ribs finely noded; rose-fawn, nodules whitish; aperture small, plaits three, small.

SOWERBY, Conch. Illus. f. 27. Thesaurus Conch. vol. ii. p. 455. pl. 93. f. 26.

Hab. Ceylon; Dr. Siebold.

Sculptured throughout with delicate close-set ribs, finely noded at distant intervals, the shell being of a subtransparent pinkish-fawn colour, inclining more to rose towards the apex.

### Species 20. (Fig. a, b, Mus. Cuming.)

CANCELLARIA GRANOSA. *Can. testâ subpyramidalî, oblectè umbilicatâ, spirâ acuminato-turritâ, anfractibus supernè angustè planatis, deinde longitudinaliter costatâ, liris obtusè granatis spiraliter decussatis; fulvescente-spadiceâ, rufo sparsim maculatâ; aperturâ parviusculâ, plicis tribus, parvis.*

THE GRAINED CANCELLARIA. Shell subpyramidal, with a convex umbilicus, spire acuminately turreted, whorls narrowly flattened round the upper part, then longitudinally ribbed, spirally decussated with obtusely grained ridges; yellowish-fawn, sparingly blotched with red; aperture rather small, plaits three, small.

SOWERBY, Conch. Illus. f. 16, 17.

Hab. Peru.

The surface of this species is but indistinctly obtusely grained, of a yellowish-fawn colour, sparsely blotched round the angle of the whorls with red.

### Species 21. (Fig. a, b, Mus. Cuming.)

CANCELLARIA EBURNÆFORMIS. *Can. testâ oblongâ, imperforatâ, spirâ acuminato-exsertâ, anfractibus supernè leviter concavo-impressis, deinde convexis, striis impressis undique decussatis; albidâ, ferrugineo-rufâ tinctâ et fasciatâ; aperturâ subangustâ, fauce validè liratâ, plicis duabus, tenuibus, prominentibus.*

THE EBURNA-SHAPED CANCELLARIA. Shell oblong, imperforated, spire acuminately exserted, whorls slightly concavely impressed round the upper part, then con-

vex, decussated throughout with impressed striae; whitish, banded and stained with rust-red; aperture rather narrow, interior strongly ridged, plaits two, thin, prominent.

Hab. —?

This species partakes of the characters of *C. reticulata* and *acuminata*, but is distinctly characterized by the more acuminated convolution of the spire, and more globose form of the body-whorl.

### Species 22. (Fig. a, b, Mus. Cuming.)

CANCELLARIA DECUSSATA. *Can. testâ globoso-fusiformi, oblectè umbilicatâ, spirâ breviusculâ, acutâ, anfractibus ad suturam subimpressis, liris funiculatis undique cancellatis; fulvescente; aperturâ subangustâ, plicis tribus, mediocribus.*

THE DECUSSATED CANCELLARIA. Shell globosely fusiform, with a covered umbilicus, spire rather short, sharp, whorls slightly impressed at the suture, cancellated throughout with corded ridges; fulvous; aperture rather narrow, plaits three, moderate.

SOWERBY, Pro. Zool. Soc. 1832, p. 55.

Hab. Panama (dredged from a sandy bottom, in ten to thirteen fathoms); Cuming.

Of a somewhat *Triton*-like form, openly reticulated throughout with rather distant narrow raised cords.

### Species 23. (Fig. a, b, Mus. Cuming.)

CANCELLARIA URCEOLATA. *Can. testâ subfusiformi-turritâ, solidiusculâ, imperforatâ, spirâ exsertâ, anfractibus supernè angustè obtusè angulatis, deinde plano-convexis, obliquè longitudinaliter corrugato-liratis, sulcis spiralibus linearibus decussatis; fulvescentestramineâ; aperturâ parviusculâ, plicis duabus, angustis, subprominentibus.*

THE URCEOLATE CANCELLARIA. Shell somewhat fusiformly turreted, rather solid, imperforated, spire exserted, whorls narrowly obtusely angled, then flatly convex, obliquely longitudinally wrinkle-ridged, decussated with spiral linear grooves; fulvous straw-colour; aperture rather small, plaits two, narrow, rather prominent.

HINDS, Zool. Voy. Sulphur, Moll. p. 41. pl. 12. f. 7, 8.

Hab. Gulf of Papagayo and San Blas (in seven to fourteen fathoms); Hinds.

Of a solid fusiformly turreted growth, superficially cancellated with oblique longitudinal waved ridges and spiral linear grooves.









26a.



24a.



25b



27a.



26a:



27b



26b.



28a.



24b.



28b

# CANCELLARIA.

## PLATE VI.

Species 24. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA CRENIFERA.** *Can. testā subpyramidalī, profundē umbilicatā, spirā acuminatā, anfractibus ad suturam plano-excavatis, deinde obliquē costatis, costis ad angulum muricato-uncinatis, spiraliter crenato-liratis; livido-spadiceā, liris albidis; aperturā parvā, fauce incrassatā, plicis tribus, mediocribus.*

**THE CRENATED CANCELLARIA.** Shell subpyramidal, deeply umbilicated, spire acuminated, whorls flatly excavated at the suture, then obliquely ribbed, the ribs prickly hooked at the angle, spirally crenately ridged; livid fawn, ridges white; aperture small, thickened in the interior, plaits three, moderate.

SOWERBY, Conch. Illus. f. 29. Thesaurus Conch. vol. ii. p. 453. pl. 96. f. 84 to 86.

*Hab.* Bay of Manila (in sandy mud at the depth of five fathoms); Cuming.

This elegantly formed species is peculiarly characterized by the prickly-hooked termination of the ribs, which are crenated throughout with white cross-ridges.

Species 25. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA SCALARINA.** *Can. testā pyramidalī, vix umbilicatā, spirā acuminato-turritā, anfractibus ad suturam ampliter excavatis, acutē angulatis, obliquē costatis, costis angustis, distantibus, ad angulum elevatis; fulvo-spadiceā, albo-fusciatā; aperturā parvā, plicis tribus, parvis.*

**THE LADDER CANCELLARIA.** Shell pyramidal, scarcely umbilicated, spire acuminately turreted, whorls largely excavated at the suture, sharply angled, obliquely ribbed, ribs narrow, distant, raised at the angle; fulvous-fawn, banded with white; aperture small, plaits three, small.

LAMARCK, Anim. sans vert. vol. iv. p. 403.

*Hab.* West Indies.

It is not possible to determine, satisfactorily, which species is the Lamarckian *C. scalarina*. The shell here figured is that assigned to it by Mr. Sowerby.

Species 26. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA MELANOSTOMA.** *Can. testā ovatā, subventricosā, imperforatā, spirā breviusculā, acuminatā, anfractibus convexis, liris subtilibus undique densē decussatis; fulvescente-albā, rufo-fusco tinctā et fasciatā; aperturā ovatā, columellā subexcavatā, latē encausticā, purpureo-fuscā, plicis tribus, mediocribus.*

**THE BLACK-MOUTH CANCELLARIA.** Shell ovate, somewhat

ventricose, imperforated, spire rather short, acuminate, whorls convex, closely decussated throughout with fine ridges; fulvous-white, stained and banded with red-brown; aperture ovate, columella somewhat excavated, broadly enamelled, purple-brown, plaits three, moderate.

SOWERBY, Pro. Zool. Soc. 1845, p. 137.

*Hab.* — ?

Chiefly distinguished by its wide-spread enamelled lamina around the columella, of a dark purple-brown colour.

Species 27. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA BIFASCIATA.** *Can. testā fusiformi-oblongā, ad basin attenuatā, imperforatā, spirā exertā, anfractibus plano-convexis, liris parvis confertis undique densē decussatis; rufescente-spadiceā, fasciis duabus pallidis cingulatā; aperturā oblongo-ovatā, columellā arcuatā, triplicatā.*

**THE TWO-BANDED CANCELLARIA.** Shell fusiformly oblong, attenuated at the base, imperforated, spire exerted, whorls flatly convex, densely decussated without with small close-set ridges; reddish-fawn, encircled with two faint bands; aperture oblong-oval, columella arched, three-plaited.

DESHAYES, Enc. Méth. Vers., vol. ii. p. 181.

*Cancellaria oblonga*, Kiener.

*Hab.* Straits of Macassar (in coarse sand); Hinds.

The short description of *C. oblonga* in the Appendix to the Tankerville Catalogue does not agree with this fusiform *Mitre*-like species.

Species 28. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA TEXTILIS.** *Can. testā subpyramidalī, subumbilicatā, spirā acuminato-turritā, anfractibus ad suturam impresso-excavatis, deinde obliquē longitudinaliter costatis, liris spiralibus subobscuris decussatis; rufo-castaneā, super costas hic illie alhipunctatā; aperturā parvā, plicis tribus, mediocribus.*

**THE TEXTILE CANCELLARIA.** Shell subpyramidal, slightly umbilicated, spire acuminately turreted, whorls impressly excavated at the suture, then obliquely longitudinally ribbed, decussated with faint spiral ridges; reddish-chestnut, here and there white-dotted on the ribs; aperture small, plaits three, moderate.

KIENER, Coquilles Vivantes, *Cancellaria*, p. 10. pl. 7. f. 1.

*Hab.* Moluccas.

An elegant species, conspicuously distinguished by its chestnut-red colour, sparsely dotted on the ribs with white.







29a.



30b.



30a.



31a.



31b.



32a.



32b.



33b.



33a.



38b.

Species 29. (Fig. a, b, Mus. Cuming.)

CANCELLARIA BICOLORE. *Can. testā ovato-ventricosa, latē profundē umbilicatā, spirā breviusculā, turrītā, anfractibus ad suturam latē excavatis, acutē angulatis, longitudinaliter remotē costatis, tenuē spiraliter liratis; rufo-castaneā, versus apicem albā; aperturā trigono-ovalā, basi sinuatā, plicis tribus, subprominentibus.*

THE TWO-COLOURED CANCELLARIA. Shell ovately ventricose, broadly deeply umbilicated, spire rather short, turreted, whorls broadly excavated at the suture, sharply angled, longitudinally distantly ribbed, faintly spirally ridged; reddish-chestnut, white towards the apex; aperture triangularly ovate, sinuated at the base, plaits three, rather prominent.

HINDS, Zool. Voy. Sulphur, Moll. p. 43. pl. 12. f. 13, 14.  
Hab. Island of Samar, Philippines; Cuming.

A sharply angled broadly turreted shell, with the longitudinal ribs rather distant from each other.

Species 30. (Fig. a, b, Mus. Cuming.)

CANCELLARIA HEMASTOMA. *Can. testā pyramidalis-ovalā, solidā, subangustē umbilicatā, spirā oblusē turrītā, anfractibus superne rudē angulatis, longitudinaliter crassicoctatis, sulcis linearibus spiralibus decussatis; lutescente-albā, rufo-fusco maculatā et fasciatā; aperturā parvā, faucē lirātā et corrugatā, vivide sanguineā, plicis tribus, angustis.*

THE RED-MOUTHED CANCELLARIA. Shell pyramidally ovate, solid, rather narrowly umbilicated, spire obtusely turreted, whorls rudely angled round the upper part, longitudinally thickly ribbed, decussated with spiral linear grooves; yellowish-white, blotched and banded with red-brown; aperture small, interior ridged and wrinkled, bright red, plaits three, narrow.

SOWERBY, Pro. Zool. Soc. 1832, p. 54.

Hab. Gallapagos Islands (dredged from a sandy bottom, at a depth of ten to sixteen fathoms); Cuming.

A solid rudely sculptured shell, with a characteristic bright-red aperture.

Species 31. (Fig. a, b, Mus. Cuming.)

CANCELLARIA CHRYSOSTOMA. *Can. testā subglobosā, vix umbilicatā, spirā subpyramidalis, superne parum angulatis, costis crassis et liris rudē decussatis; cærulescente-albā, castaneo sparsim lineatā et punctatā; aperturā rotundato-expansā, faucē lirātā et corrugatā, vivide aurantio-sanguineā, plicis tribus, prominentibus.*

THE GOLDEN-MOUTH CANCELLARIA. Shell subglobose, scarcely umbilicated, spire subpyramidal, whorls but little angled at the upper part, rudely with thick ribs and ridges; bluish-white, spa-

dotted and lineated with chestnut; aperture roundately expanded, interior ridged and wrinkled, bright orange-red, plaits three, prominent.

SOWERBY, Pro. Zool. Soc. 1832, p. 54,

Hab. Panama and St. Elena (dredged from a sandy bottom, at the depth of from eight to ten fathoms); Cuming.

Obscurely rudely decussated with ribs and ridges, and with a more expanded aperture than the preceding species.

Species 32. (Fig. a, b, Mus. Cuming.)

CANCELLARIA GONIOSTOMA. *Can. testā subglobosā, ampliter profundē umbilicatā, spirā turrītā, anfractibus superne latissime excavato-angulatis, longitudinaliter costatis, costis distantibus, liris spiralibus clathratis; purpurascente-albā, castaneo-fusco hic illic lineatā; aperturā parvā, trigonā, plicis duabus, subobsoletis.*

THE ANGLE-MOUTH CANCELLARIA. Shell subglobose, largely deeply umbilicated, spire turreted, whorls very broadly excavately angled at the upper part, longitudinally ribbed, ribs distant, latticed with spiral ridges; purple-white, here and there lineated with chestnut-brown; aperture small, triangular, plaits two, rather obsolete.

SOWERBY, Pro. Zool. Soc. 1832, p. 51.

Hab. Conchagua and St. Salvador, Central America (dredged from a sandy bottom, at a depth of about eight fathoms); Cuming.

This fine species is characterized by its broadly angled turreted growth and bold latticed sculpture.

Species 33. (Fig. a, b, Mus. Cuming.)

CANCELLARIA RIGIDA. *Can. testā ovalā, subampliter profundē umbilicatā, spirā turrītā, anfractibus superne latē excavato-angulatis, obliquē costatis, costis tenuibus, subdistantibus, liris subtilibus spiralibus decussatis; luteo-spadicēā, ad angulum purpureo-fusco maculatā; aperturā trigonā, ad basin sinuatā, triplicatā.*

THE RIGID CANCELLARIA. Shell ovate, rather largely deeply umbilicated, spire turreted, whorls broadly excavately angled at the upper part, obliquely ribbed, ribs thin, rather distant, decussated with fine spiral ridges; yellowish-fawn, spotted at the angle with purple-brown; aperture triangular, sinuated at the base, plaits three.

SOWERBY, Pro. Zool. Soc. 1832, p. 53.

Cancellaria costata, Sowerby, Jun.

Hab. Puerto Portifero, Central America (from a sandy bottom, at the depth of thirteen fathoms); Cuming.

This species comes near to *C. goniostoma* in form, but is at once distinguished by its more delicate ribs.









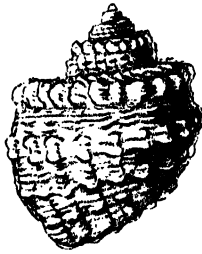
35a



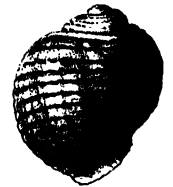
34a.



37a



36a.



37b.



36b.



38a.



34b.

# CANCELLARIA.

## PLATE VIII.

Species 34. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA LÆVIGATA.** *Can. testā ovalē, imperforatā, spirā breviusculā, exsertā, anfractibus superne angustē obtusē angulatis, ad angulum obsolete plicato-nodulatis, deinde levigatis; albā, carneo-fascescente obscure tinctā et ad angulum maculatā; aperturā ovalē, fauce densē liratā, plicis tribus, prominentibus.*

**THE SMOOTH CANCELLARIA.** Shell ovate, imperforated, spire rather short, exserted, whorls narrowly obtusely angled at the upper part, obsolete plicately noduled at the angle, then smooth; white, obscurely tinged with flesh-brown and blotched at the angle; aperture ovate, closely ridged within, plaits three, prominent.

SOWERBY, Conch. Illus. f. 24.

*Hab.* New South Wales.

A smooth species, partaking, like *C. spirata*, of the typical form of the little *Eburna australis*.

Species 35. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA SINENSIS.** *Can. testā sulfusiformi-ovalē, imperforatā, spirā exsertā, subobtusā, anfractibus superne concavo-declivibus, liris subtilibus granosis undique decussatis; albidā, rufo-fusco tinctā et fasciatā; aperturā ovalē, fauce validē liratā, columellā arcuatā, plicis duabus, mediocribus.*

**THE CHINESE CANCELLARIA.** Shell somewhat fusiformly ovate, imperforated, spire exserted, somewhat obtuse, whorls convexly slanting at the upper part, everywhere decussated with fine granose ridges; whitish, stained and banded with red-brown; aperture ovate, interior strongly ridged, columella arched, plaits two, moderate.

*Hab.* China.

A simply convoluted fusiformly oblong shell, with the surface closely decussated throughout with fine granose linear ridges.

Species 36. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA TUBERCOLOSA.** *Can. testā subglobosā, profunde umbilicatā, spirā brevī, subimmersā, anfractibus superne concavo-angulatis, in angulum serrato-laminatis, deinde convexis, striatis et tuberculatis; candidā; aperturā subamplā, trigono-ovalē, labro columellari latē reflexo, plicis duabus, mediocribus, obliquis.*

**THE TUBERCLED CANCELLARIA.** Shell subglobose, deeply umbilicated, spire short, somewhat immersed, whorls concavely angled round the upper part, serrately la-

minated in the angle, then convex, striated and tubercled; white; aperture rather large, triangularly ovate, columellar lip broadly reflected, plaits two, moderate, oblique.

SOWERBY, Pro. Zool. Soc. 1832, p. 51.

*Hab.* Iquiqui, Peru (dredged from a sandy bottom, at the depth of seven fathoms); Cuming.

Of a peculiar chalk-white aspect allied to *C. bulbulus*.

Species 37. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA OBTUSA.** *Can. testā globosā, minutē umbilicatā, spirā brevissimā, obtusā, suturā subimpressā, anfractibus rotundatis, longitudinaliter subobsolete plicatis, spiraliter regulariter sulcatis; luteo-spadiceā; aperturā ovalē, subamplā, columellā arcuatā, plicis duabus, parvis.*

**THE OBTUSE CANCELLARIA.** Shell globose, minutely umbilicated, spire very short, obtuse, suture slightly impressed, whorls rounded, longitudinally somewhat obsolete plicated, spirally regularly grooved; yellowish-fawn; aperture ovate, rather large, columella arched, plaits two, small.

DESHAYES, Enc. Méth. Vers, vol. ii. p. 187. Cuv. Règne Anim. nov. edit. Moll. pl. 52. f. 6.

*Hab.* — ?

This shell, formerly in the collection of M. Deshayes, and the only example of the species known, is remarkably distinguished by its very obtuse growth.

Species 38. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA PULCHRA.** *Can. testā ovalo-globosā, vix umbilicatā, spirā acutē conoidē, anfractibus convexis, superne subangulatis, costis obliquis longitudinalibus lirisque spiralibus spinosis undique clathratis; albidā, castaneo-fusco fasciatā et lineatā; aperturā parviusculā, fauce validē liratā, plicis tribus, mediocribus.*

**THE BEAUTIFUL CANCELLARIA.** Shell ovately globose, scarcely umbilicated, spire sharply conoid, whorls convex, slightly angled at the upper part, latticed throughout with oblique longitudinal ribs and spiral ridges; whitish, banded and lined with chestnut-brown; aperture rather small, strongly ridged within, plaits three, moderate.

SOWERBY, Pro. Zool. Soc. 1832, p. 50.

*Hab.* St. Elena, West Columbia (from a sandy bottom, at a depth of from eight to ten fathoms); Cuming.

Closely allied to *C. similis*, but conspicuously distinguished by the spiny processes upon the ribs.







101a



102a



110



116



118a



# CANCELLARIA.

PLATE IX.

Species 39. (Fig. a, b, Mus. Cuming.)

CANCELLARIA AFFINIS. *Can. testā fusiformi-ovatā, minute umbilicatā, spirā mediocri, anfractibus supernè angulato-declivibus, deinde planulatis, liris obliquis et spiralibus undique clathratis; fulvā, liris rufescentibus; aperturā subangustā, plicis tribus, mediocribus.*

THE ALLIED CANCELLARIA. Shell fusiformly ovate, minutely umbilicated, spire middling, whorls angularly slanting round the upper part, then rather flat, latticed throughout with oblique and spiral ridges; fulvous, ridges reddish; aperture rather narrow, plaits three, moderate.

*Cancellaria indentata, var.*, Sowerby.

*Hab.* — ?

Of a characteristic fusiformly oblong form, neatly latticed throughout without any depression at the suture. It differs from *C. indentata* in form and in not being indented at the lip, while the columellar-plaits are finer.

Species 40. (Fig. a, b, Mus. Cuming.)

CANCELLARIA BREVIS. *Can. testā subgloboā, subampliter umbilicatā, spirā abbreviato-turratā, anfractibus supernè latè excavato-angulatis, longitudinaliter obliquè rudè costatis, spiraliter obsolete tenuiliratis; albida, circa angulum castaneo-maculatā; aperturā trigono-ovatā, parvā, plicis duabus, parvis.*

THE SHORT CANCELLARIA. Shell subglobose, rather largely umbilicated, spire shortly turreted, whorls broadly excavately angled round the upper part, longitudinally obliquely rudely ribbed, spirally obsoletely finely ridged; whitish, blotched with chestnut-brown about the angle; aperture triangularly ovate, small, plaits two, small.

SOWERBY, Pro. Zool. Soc. 1832, p. 52.

*Hab.* Puerto Portrero and St. Elena; Cuming.

Closely allied to *C. goniosoma*, of which it has the appearance of being a small worn specimen.

Species 41. (Fig. a, b, Mus. Cuming.)

CANCELLARIA INDENTATA. *Can. testā subquadrato-oblongā, viz umbilicatā, spirā brevi, acuminatā, anfractibus supernè declivibus, obscurè angulatis, deinde planoconvexis, liris longitudinalibus et spiralibus undique clathratis; rufescente-fuscā; aperturā angustā oblongā, intus validè lirata, labro verius basin indentato, plicis duabus, rudibus, prominentibus.*

THE INDENTED CANCELLARIA. Shell somewhat squarely oblong, scarcely umbilicated, spire short, acuminate, whorls slanting round the upper part, obscurely angled, then flatly convex, latticed throughout with

longitudinal and spiral ridges; reddish-brown; aperture narrowly oblong, interior strongly ridged, lip indented towards the base, plaits two, rude, prominent.

SOWERBY, Pro. Zool. Soc. 1832, p. 54.

*Hab.* Panama.

Distinguished by its oblong-square form, closely latticed sculpture, and indented lip.

Species 42. (Fig. a, b, Mus. Cuming.)

CANCELLARIA CONTABULATA. *Can. testā ovali, angustè umbilicatā, spirā turratā, anfractibus supernè latè excavato-angulatis, deinde convexis, longitudinaliter tenuè corrugato-costatis, costis subtiliter nodulatis, striis spiralibus decussatis; pallidè stramineā, aurantio-rufa ad angulum sparsim maculatā; aperturā trigono-ovatā, plicis tribus, parvis.*

THE BARRED CANCELLARIA. Shell ovate, narrowly umbilicated, spire turreted, whorls broadly excavately angled at the upper part, then convex, longitudinally finely wrinkle-ribbed, ribs finely noded, decussated with spiral striae; pale straw-colour, sparingly blotched at the angle with orange-red; aperture triangularly ovate, plaits three, small.

SOWERBY, Conch. Illus. f. 28. Thesaurus Conch. vol. ii. p. 455. pl. 93. f. 19, 23.

*Cancellaria pusilla*, Sowerby.

*Hab.* Ceylon (on the sands); Dr. Sibbald.

Of elegant form, delicately sculptured and coloured.

Species 43. (Fig. a, b, Mus. Cuming.)

CANCELLARIA CRISPATA. *Can. testā ovali, imperforatā, spirā acutè exsertā, anfractibus supernè angustè angulatis, obliquè longitudinaliter costatis, costis crassis, ad angulum muricato-uncinatis, striis spiralibus decussatis; albida, lineis fasciisque castaneo-fuscis cingulatā; aperturā ovali, parvā, fauce tenuiliratā, plicis tribus, parvis.*

THE CRISP CANCELLARIA. Shell ovate, imperforated, spire sharply exserted, whorls narrowly angled round the upper part, obliquely longitudinally ribbed, ribs thick, prickly hooked at the angle, decussated with spiral striae; whitish, encircled with chestnut-brown bands and lines; aperture ovate, small, interior finely ridged, plaits three, small.

SOWERBY, Conch. Illus. f. 20. Thesaurus Conch. vol. ii. p. 452. pl. 96. f. 89.

*Hab.* Island of Negros, Philippines (dredged in fine sand, at the depth of five fathoms); Cuming.

Allied to *C. crenifera*, from which species it is chiefly distinguished by its very thick ribs.





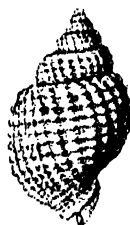




45a



47a



46a.



47b.



46b.



48a.



49b.



49b.

# CANCELLARIA.

## PLATE X.

Species 44. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA AUSTRALIS.** *Can. testā ovalā, imperforatā, spirā acuminatā, suturā impressā, anfractibus rotundatis, liris longitudinalibus obliquis confertis lirisque tenuibus spiralibus; candidā; aperturā parviusculā, columellā arcuatā, plicis tribus, mediocribus.*

**THE SOUTHERN CANCELLARIA.** Shell ovate, imperforated, spire acuminate, suture impressed, whorls rounded, decussated with close-set oblique longitudinal ribs, and fine spiral ridges; white; aperture rather small, columella arched, plaits three, moderate.

**SOWERBY**, Conch. Illus. sp. 24. f. 23. Thesaurus Conch. vol. ii. p. 442. pl. 95. f. 72, 73.

*Hab.* New South Wales.

Of an ordinary *Buccinum*-like form, strongly decussated throughout with close-set ribs and ridges.

Species 45. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA ALBIDA.** *Can. testā subfusiformi-oblongā, solidā, imperforatā, basi contortā, spirā acuminatā, anfractibus plano-convexis, ad suturam angustē plicatis, deinde declivi-angulatis, liris funiculatis undique eleganter reticulatis; candidā; aperturā parvā, angustā, plicis duabus, subprominentibus.*

**THE WHITISH CANCELLARIA.** Shell somewhat fusiformly oblong, solid, imperforated, twisted at the base, spire acuminate, whorls flatly convex, narrowly puckered at the suture, then slantingly angled, elegantly reticulated throughout with corded ridges; white; aperture small, narrow, plaits two, rather prominent.

**HINDS**, Pro. Zool. Soc. 1843, p. 47.

*Hab.* Bay of Guayaquil, Panama, and Veragua (at a depth of from seven to twenty-three fathoms); Cuming.

This elegantly fusiform species, collected by Mr. Hinds in the voyage of the 'Sulphur,' is most exquisitely latticed throughout with equidistant raised cord-like ridges.

Species 46. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA CANDIDA.** *Can. testā subfusiformi-ovalā, ventricosā, basi contortā, imperforatā, spirā acutē acuminatā, anfractibus rotundatis, ad suturam parum planatis, undique densē nodoso-reticulatis; candidā; aperturā subangustā, fauce validē liratā, plicis duabus, fortibus, valdē prominentibus.*

**THE WHITE CANCELLARIA.** Shell somewhat fusiformly ovate, swollen, imperforated, twisted at the base,

spire sharply acuminate, whorls rounded, but little flattened at the suture, densely nodosely reticulated throughout; white; aperture rather narrow, strongly ridged within, plaits two, strong, very prominent.

**SOWERBY**, Conch. Illus. sp. 2. f. 1.

*Hab.* Polynesia.

This species very closely resembles *C. australis*, but it may be at once recognized by its stronger sculpture, and more prominent columellar plaits.

Species 47. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA VENTRICOSA.** *Can. testā fusiformi-oblongā, ventricosā, imperforatā, spirā acutē acuminatā, anfractibus superne plano-convexis, deinde rotundatis, liris longitudinalibus et spiralibus undique decussatis; rufo-fuscat; plicis tribus, angustis.*

**THE VENTRICOSE CANCELLARIA.** Shell fusiformly oblong, ventricose, imperforated, spire sharply acuminate, whorls flatly convex at the upper part, then rounded, decussated throughout with longitudinal and spiral ridges; red-brown; plaits three, narrow.

**HINDS**, Pro. Zool. Soc. 1843, p. 47.

*Hab.* Realco, Central America (at a depth of from sixty to seventy fathoms), and Gulf of Magdalena, California (in sandy mud at seven fathoms); Hinds.

Not much unlike *C. albida*, but of a peculiar red-brown colour, carved with a distinct pattern of sculpture.

Species 48. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA GEMMULATA.** *Can. testā globoso-ovalā, solidā, imperforatā, spirā brevī, acutā, anfractibus superne vix angulatis, plano-convexis, costis nodulatis lirisque densē conspicuē decussatis; albā; aperturā subexpansā, plicis tribus, mediocribus.*

**THE GEMMED CANCELLARIA.** Shell globosely ovate, solid, imperforated, spire short, sharp, whorls scarcely angled at the upper part, flatly convex, closely prominently decussated with noded ridges; white; aperture rather expanded, plaits three, moderate.

**SOWERBY**, Pro. Zool. Soc. 1832, p. 55.

*Hab.* Bay of Nicoya, Central America (from a sandy muddy bottom); Cuming.

Distinguished from the preceding species chiefly by its more contracted subglobose form and roughly noded sculpture.







50a.



49a.



50b.



51a.



49b.



51b.



52a.



52c.



# CANCELLARIA.

## PLATE XI.

Species 49. (Fig. a, b, c, Mus. Cuming.)

**CANCELLARIA MITRIFORMIS.** *Can. testā fusiformi-elongatā, imperforatā, ad basin attenuato-recurvā, spirā turrilā, anfractibus supernè declivi-angulatis et concavis, liris nodulatis undique densè decussatis, liris spiralibus ad labrum elevatis et serratis; rufo-fuscā aut nigricante; aperturā subangustā, columellā uniplicatā.*

**THE MITRE-SHAPED CANCELLARIA.** Shell fusiformly elongated, imperforated, attenuately recurved at the base, spire turreted, whorls slantingly angulated and concave at the upper part, closely decussated throughout with noduled ridges, the spiral ridges raised and serrated at the lip; red-brown or blackish; aperture rather narrow, columella one-plaited.

SOWERBY, Pro. Zool. Soc. 1832, p. 51.

*Cancellaria uniplicata*, Sowerby.

*Hab.* Panama (dredged in sandy mud); Cuming.

Distinguished from all other species of the genus by its elongated *Mitra*-like form and serrated lip.

Species 50. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA MACROSPIRA.** *Can. testā acuminato-turrilā, semipellucidā, minutè umbilicatā, spirā elongatā, hic illic varicosā, anfractibus ad suturam angustè pléno-excavatis, deinde convexis, liris subtilibus crenulatis decussatis; pellucido-albā; aperturā minutā, labro varicosè incrassato, labro columellari expanso, plicis tribus, tenuibus.*

**THE LARGE SPIRE CANCELLARIA.** Shell acuminately turreted, semipellucid, minutely umbilicated, spire elongated, here and there varicose, whorls narrowly flatly excavated at the suture, then convex, decussated with fine crenulated ridges; transparent white; aperture very small, lip varicosely thickened, columellar lip expanded, plaits three, thin.

ADAMS and REEVE, Moll. Voy. Samarang, p. 41. pl. 10. f. 2.

*Hab.* Coast of Borneo, China Sea; Belcher.

An extremely delicate transparent white shell, remarkable for its narrow elongated form of convolution.

Species 51. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA TRIGONOSTOMA.** *Can. testā eleganter pyramidalit-turbinatā, Scleriformi, pervampiliter perspectivè umbilicatā, spirā perattenuatā, anfractibus acutè trigonis, spiraliter obsolete liris, ad angulum exteriorem spinosis; roseo-albā; aperturā parvā, trigonā, columellā bicipitatā, plicis tenuibus.*

**THE TRIANGULAR-MOUTH CANCELLARIA.** Shell elegantly pyramidally turbinated, Scleraria-shaped, very largely perspectively umbilicated, spire much attenuated, whorls sharply triangular, spirally obsolete ridged, spined along the outer angle; pink-white; aperture small, triangular, columella two-plaited, plaits three.

*Delphinula trigonostoma*, Lamarck, Anim. sans vert. vol. ix. p. 88.

*Cancellaria trigonostoma*, Deshayes.

*Le Bordstrappe*, Fauna.

*Hab.* Ceylon; Kiener.

This very remarkable species is convoluted with one side of each triangular whorl so attached to that of the preceding as to form a cone enclosing a large deep perspective umbilicus.

Species 52. (Fig. a, b, c, Mus. Cuming.)

**CANCELLARIA CLAVATULA.** *Can. testā elongato-turrilā, ad basin recurvā, imperforatā, spirā acutā, hic illic validè irregulariter varicosā, anfractibus plano-convexis, obtusè longitudinaliter costatis, spiraliter striatis; rufo-fuscā, albo maculatā et fasciatā; aperturā parvā, columellā bicipitatā.*

**THE CLUB CANCELLARIA.** Shell elongately turreted, recurved at the base, imperforated, spire sharp, here and there strongly irregularly varicose, whorls flatly convex, obtusely longitudinally ribbed, spirally striated; red-brown, blotched and banded with white; aperture small, columella two-plaited.

SOWERBY, Pro. Zool. Soc. 1832, p. 52.

*Hab.* Panama (dredged from a sandy muddy bottom, at seven fathoms); Cuming.

Chiefly distinguished, amongst other peculiarities, by its strong irregular deposit of varices.



11

12

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54b.



54c.



55a.



55b.



56a.



56c.



# CANCELLARIA.

## PLATE XII.

Species 53. (Fig. a, b, Mus. Cuming.)

CANCELLARIA EXCAVATA. *Can. testâ oblongo-ovalâ, tenuiculâ, minutissimè umbilicatâ, spirâ turritâ, acutâ, anfractibus ad suturam latè profundè excavatis, ad angulum carinatis, deinde planulatis, lævibus, nitentibus; pellucido-albâ; aperturâ subquadrato-ovalâ, fauce tenuiliratâ, columellâ arcuatâ, triplicatâ.*

THE EXCAVATED CANCELLARIA. Shell oblong-ovate, rather thin, very minutely umbilicated, spire turreted, sharp, whorls broadly deeply excavated at the suture, keeled at the angle, then flattened, smooth, shining; transparent white; aperture somewhat squarely ovate, finely ridged within, columella arched, three-plaited.

SOWERBY, Pro. Zool. Soc. 1848, p. 137.

Hab. South Australia.

This very delicate transparent white *Eburna*-like species is remarkably characterized by its very broad and deeply excavated sutural channel.

Species 54. (Fig. a, b, Mus. Cuming.)

CANCELLARIA ARTICULARIS. *Can. testâ ovato-conoideâ, angustè profundè umbilicatâ, spirâ acutè exsertâ, anfractibus ad suturam angustè subprofundè excavatis, deinde convexis, obliquè longitudinaliter subtiliter costatis, spiraliter obscurè liris, costis minutè nodulatis, nodulis ad angulum prominentioribus; livido-carneâ, nodulis albidis; aperturâ trigono-ovalâ, subexpansâ, fauce validè liratâ, columellâ triplicatâ.*

THE ARTICULATED CANCELLARIA. Shell ovately conoid, narrowly deeply umbilicated, spire sharply exserted, whorls narrowly rather deeply excavated at the suture, then convex, obliquely longitudinally finely ribbed, spirally faintly ridged, ribs minutely noded, nodules more prominent at the angle; livid flesh-colour, nodules whitish; aperture triangularly ovate, rather expanded, interior strongly ridged, columella three-plaited.

SOWERBY, Conch. Illust. sp. 34. f. 32.

Hab. Ceylon; Dr. Sibbald.

A most elegantly sculptured species, with somewhat of the general aspect of a *Nassa*.

Species 55. (Fig. a, b, Mus. Cuming.)

CANCELLARIA PISCATORIA. *Can. testâ ovalâ, oblectè umbilicatâ, ad basin subcontortâ, spirâ attenuatâ, anfractibus superne excavato-angulatis, ad angulum muricato-nodulatis, deinde convexis, liris muricatis, decussatis; cinereo-albâ, livido-olivaceo tinctâ et nebulatâ, columellâ arcuatâ, obscurè uniplicatâ.*

THE FISHERMEN'S CANCELLARIA. Shell ovate, with a covered umbilicus, somewhat twisted at the base, spire sharply attenuated, whorls excavately angled at the upper part, prickly noded at the angle, then convex, decussated with prickly ridges; ash-white, stained and clouded with livid olive, columella arched, obscurely one-plaited.

*Buccinum piscatorium*, Gmelin, Syst. Nat. p. 3496. no. 116.

*Cancellaria piscatoria*, Deshayes.

*Cancellaria nodulosa*, Lamarck.

*Nassa nodosa*, Martini.

*Le Solat*, Adanson.

Hab. Mouth of the Gambia, West Africa.

A somewhat abnormal form of the genus, with only a single indistinct plait on the columella.

Species 56. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SPIRATA. *Can. testâ ovalâ, minutè superficialiter umbilicatâ, spirâ breviusculâ, acutâ, anfractibus plano-convexis, ad suturam profundè excavatis, prope apicem longitudinaliter costatis, ad basin spiraliter striatis; albidâ, carneo-tinctâ, ad angulum maculis aurantio-rufis cingulatâ; aperturâ ovalâ, fauce validè liratâ, columellâ arcuatâ, triplicatâ.*

THE SPIRAL CANCELLARIA. Shell ovate, minutely superficially umbilicated, spire rather short, sharp, whorls flatly convex, deeply excavated at the suture, longitudinally ribbed near the apex, spirally striated at the base; white, flesh-tinged, encircled with orange-red spots at the angle; aperture ovate, strongly ridged within, columella arched, three-plaited.


LAMARCK, Anim. sans vert. vol. ix. p. 408.

Hab. Garden Island, Swan River.

This shell so nearly resembles the *Eburna australis* that, as we have shown in speaking of that species, it has been confounded with it by very high authorities. The pre-

# CANCELLARIA.—PLATE XII.

sence of the columellar plaits in the shell assigned to *Cancellaria* is decisive.

Species . (Fig. a, b, Mus. Cuming.)

**CANCELLARIA COSTIFERA.** *Can. testā ovalā, latē superficialiter umbilicatā, spirā turrilatā, anfractibus superne latē excavato-angulatis, oblique longitudinaliter costatis, spiraliter substriatis; livido-purpureā, lineis rufis interruptis cingulatā, angulo costisque hic illic albis; aperturā trigono-ovalā, columellā arcuatā, triplicatā.*

**THE RIBBED CANCELLARIA.** Shell ovate, broadly super-

ficially umbilicated, spire turreted, whorls broadly excavately angled at the upper part, obliquely longitudinally ribbed, spirally faintly striated; livid-purple, encircled with interrupted red lines, angle and ribs here and there white; aperture triangularly ovate, columella arched, three-plaited.

SOWERBY, *Conch. Illus.* sp. 33. f. 31.

*Hab.* Island of Burias, Philippines (in coarse sand at the depth of nine fathoms); Cuming.

The most striking peculiarity of this species is its painting of interrupted red lines upon a dull livid-purple ground.





59a.



59b.



60a.



61b.



62a.



62b.



63a.



63b.

## Species 58. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SEMI-DISJUNCTA. *Can. testâ ovatâ, latissime apertâ umbilicatâ, spirâ laxè exsertâ, anfractibus ad suturam latissimè excavatè angulatis, angulo obtuso, spiraliter liris et excavatè sulcatis, liris sulcisque impresso-striatis; spadiceâ, aurantio-fusco tinctâ et maculatâ; aperturâ trigonâ, columellâ bicipitatâ.*

THE HALF-DISJOINED CANCELLARIA. Shell ovate, very broadly openly umbilicated, spire loosely exserted, whorls very broadly excavately angled at the suture, angle obtuse, spirally ridged and excavately grooved, ridges and grooves impressly striated; fawn-colour, tinged and spotted with orange-brown; aperture triangular, columella two-plaited.

SOWERBY, Pro. Zool. Soc. 1848, p. 137.

*Hab.* Cagayan, Island of Mindanao, Philippines (from sandy mud at the depth of twenty-five fathoms); Cuming.

Readily distinguished by its loose manner of convolution, the last whorl being nearly disjoined from the preceding.

## Species 59. (Fig. a, b, Mus. Cuming.)

CANCELLARIA VERREAUXII. *Can. testâ ovalâ, minute umbilicatâ, spirâ breviusculâ, acutâ, anfractibus convexis, ad suturam angustè obtusè excavatis, longitudinaliter obliquè costatis, striis elevatis spiralibus decussatis; castaneo-rufâ; aperturâ ovalâ, fauce liris, plicis tribus parvis.*

VERREAUX'S CANCELLARIA. Shell ovate, minutely umbilicated, spire rather short, sharp, whorls convex, narrowly obtusely excavated at the suture, longitudinally obliquely ribbed, decussated with spiral raised striæ; chestnut-red; aperture ovate, interior ridged, plaits three, small.

KIENER, Coquilles Vivantes, p. 17. pl. 8. f. 3.

*Hab.* —?

\* Allied, both in respect of form and colour, to *O. Littorinaeformis*, but more prominently sculptured.

## Species 60. (Fig. a, b, Mus. Cuming.)

CANCELLARIA RUGOSA. *Can. testâ subglobosâ, solidâ, imperforatâ, anfractibus rotundatis, supernè obtusè angulatis, obliquè rudè tuberculato-costatis, spiraliter sulcatis; pallidè stramineâ, ad angulum aurantio-rufo tinctâ; aperturâ ovalâ, subexpansâ, fauce validè liris, columellâ triplicatâ.*

THE WRINKLED CANCELLARIA. Shell subglobose, solid, imperforated, whorls rounded, obtusely angled round the upper part, obliquely roughly tubercularly ribbed, spirally grooved; pale straw-colour, tinged with

orange-red at the angle; aperture ovate, rather expanded, interior strongly ridged, columella three-plaited.

LAMARCK, Anim. sans vert. vol. ix. p. 408.

*Hab.* China.

The form of this species is nearly globose, the shell being expanded, so to speak, by its rude-swollen tuberculated ridges.

## Species 61. (Fig. a, b, Mus. Cuming.)

CANCELLARIA OBLIQUATA. *Can. testâ obliquè globosâ, ventricoso-expansâ, angustè profundè umbilicatâ, spirâ parâ, acutâ, anfractibus ad suturam subtilè excavatis, deinde rotundatis, obliquè tenuicostatis, spiraliter elevato-striatis, striis super costas nitidè nodulatis, costis ad angulum subnigratis; fulvescente-albâ, rufo-fuscescente tinctâ et sparsim punctatâ; aperturâ expansâ, fauce liris, labro columellari tenè reflexo, plicis tribus.*

THE OBLIQUE CANCELLARIA. Shell obliquely globose, ventricosely expanded, narrowly deeply umbilicated, spire small, sharp, whorls rather broadly excavated at the suture, then rounded, obliquely thinly ribbed, spirally elevately striated, striæ neatly noduled on the ribs, ribs slightly prickled at the angle; fulvous-white, stained and sparingly dotted with red-brown; aperture expanded, interior ridged, columellar lip thinly reflected, plaits three.

LAMARCK, Anim. sans vert. vol. ix. p. 408.

*Hab.* Bay of Manila (in sandy mud at the depth of eight fathoms); Cuming.

A most elegantly-formed neatly sculptured species, of a delicate, shining, fulvous-white colour, sparingly tinged and dotted with reddish-brown.

## Species 62. (Fig. a, b, Mus. Cuming.)

CANCELLARIA LITTORINÆFORMIS. *Can. testâ ovalâ, profundè umbilicatâ, tenuiculâ, anfractibus supernè angustè angulatis, deinde declivi-convexis, undique decussatim striatis; rufescente-castaneâ; aperturâ subangustè ovalâ, columellâ triplicatâ.*

THE LITTORINA-LIKE CANCELLARIA. Shell ovate, deeply umbilicated, rather thin, whorls narrowly angled at the upper part, then slantingly convex, decussately striated throughout; reddish-chestnut; aperture rather narrowly ovate, columella three-plaited.

SOWERBY, Conch. Illustr. 14.

*Hab.* Ceylon.

Of precisely the typical form of *Littorina*, faintly sculptured throughout with decussating striæ.









64a



64b.



66b.



65b.



67b.



68b.

# CANCELLARIA.

PLATE XIV.

Species 63. (Fig. a, b, Mus. Cuming.)

CANCELLARIA SERRATA. *Can. testā ovatā, angustē umbilicatā, spirā acutē turratā, anfractibus superne sublatē excavato-angulatis, tenuē longitudinaliter costatis, costis acutē fimbriato-serratis; albidā, livido-olivaceo tinctā, medio albifusciatā; aperturā trigono-ovatā, fauce liratā, columellā triplicatā.*

THE SERRATED CANCELLARIA. Shell ovate, narrowly umbilicated, spire sharply turreted, whorls rather broadly excavately angled at the upper part, thinly longitudinally ribbed, ribs sharply fimbriately serrated: whitish, stained with livid olive, white-banded in the middle; aperture triangularly ovate, ridged within, columella three-plaited.

*Hab.* —?

An elegantly sculptured species, the ribs being unusually thin, erect, and sharply fimbriately striated.

Species 64. (Fig. a, b, Mus. Cuming.)

CANCELLARIA CORROSA. *Can. testā subgloboso-ovatā, crassiusculā, minūtē umbilicatā, spirā acutā, anfractibus rotundatis, ad suturam parum angulatis, liris funiculatis undique nitidē clathratis; fulvescente; aperturā parvisculā, plicis tribus, fortibus.*

THE FRETTED CANCELLARIA. Shell subglobosely ovate, rather thick, minutely umbilicated, spire sharp, whorls rounded, but little angled at the suture, everywhere neatly latticed with corded ridges; light fulvous; aperture rather small, plaits three, strong.

*Cancellaria clathrata*, Adams (not of Lamarck).

*Hab.* —?

A solid shell, peculiarly neatly latticed throughout with cord-like ridges.

Species 65. (Fig. a, b, Mus. Cuming.)

CANCELLARIA LAMELLOSA. *Can. testā ovatā, sublatē profundē umbilicatā, spirā acutē acuminatā, anfractibus superne angustē excavatis, obliquē longitudinaliter costatis, costis pulcherrimē serratis et lamellatis, ad angulum muricato-uncinatis; albidā, ad angulum rufo-*

*fusco maculatā; aperturā trigono-ovatā, fauce liratā, columellā triplicatā.*

THE LAMELLOSE CANCELLARIA. Shell ovate, rather broadly deeply umbilicated, spire sharply acuminate, whorls narrowly excavated on the upper part, obliquely longitudinally ribbed, ribs beautifully serrated and lamellated, prickly-hooked at the angle; whitish, spotted with red-brown at the angle; aperture triangularly ovate, ridged within, columella three-plaited.

HINDS, Zool. Voy. Sulphur, Moll. p. 43. pl. 12. f. 15, 16.

*Hab.* Indian Archipelago.

A beautifully sculptured species, the ribs being elegantly produced along the edge into lamellæ.

Fig. 66. (Mus. Cuming.)

The shell here represented is in a very immature stage of growth, and may be the young of *C. Spengleriana*. It however has a finer pattern of sculpture than is usual with that species.

Species 67. (Fig. a, b, Mus. Cuming.)

CANCELLARIA HYSTRIX. *Can. testā globoso-ovatā, imperforatā, spirā breviusculā, acutē acuminatā, anfractibus ad suturam angustē angulatis, obliquē longitudinaliter densē costatis, costis erectis, angustis, undique pulcherrimē muricato-serratis; albidā, livido-fuscescente pallidē linctā; aperturā ovatā, fauce rufilineatā, columellā arcuatā, plicis tribus, irregularibus.*

THE HEDGEHOG CANCELLARIA. Shell globosely ovate, imperforated, spire rather short, sharply acuminate, whorls narrowly angled at the suture, obliquely longitudinally closely ribbed, ribs erect, narrow, beautifully prickly serrated throughout; whitish, faintly tinged with livid brown; aperture ovate, interior marked with red lines, columella arched, plaits three, irregular.

*Hab.* Mauritius.

This is one of the most beautifully sculptured species of the genus. The ribs are peculiarly serrated throughout at the edge into short obtuse prickles.







68a



68c



69b.



71b.



72b.



73b.



69b.

# CANCELLARIA.

## PLATE XV.

Species 68. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA FUNICULATA.** *Can. testā acuminato-turritā, umbilicatā, spirā gracili, anfractibus ad suturam profundè impressis, obtusè angulatis, longitudinaliter costatis, costis elevatis, compressis, distantibus, liris exilibus transversis sculptis, lineā elevatā interveniente; pellucido-albā, aurantio pallidè tinctā; aperturā trigono-ovalā, labro expanso, columellā triplicatā.*

**THE CORDED CANCELLARIA.** Shell acuminately turreted, umbilicated, spire slender, whorls deeply impressed at the suture, obtusely angled, longitudinally ribbed, ribs raised, compressed, distant, sculptured with delicate transverse ridges, with a raised line intervening; transparent white, faintly tinged with orange; aperture triangularly ovate, lip expanded, columella three-plaited.

HINDS, Moll. Voy. Sulphur, p. 43. pl. 12. f. 5, 6.

*Cancellaria lyrata*, Adams and Reeve.

*Hab.* Gulf of Magdalena, California (in sandy mud, at seven fathoms); Hinds.

Characterized by its exquisitely sculptured distant ribs, which give the shell a *Scaloria*-like aspect. Although the locality given by Sir Edward Belcher to *C. lyrata* of the Voyage of the Samarang is China Sea, the species are evidently the same.

Species 69. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA MANGELIOIDES.** *Can. testā acuminato-turritā, imperforatā, spirā acutā, anfractibus superne angulatis, longitudinaliter costatis, costis compressis, distantibus, transversim striatis; candidā; aperturā trigono-ovalā, labro subexpanso, columellā triplicatā.*

**THE MANGELIA-LIKE CANCELLARIA.** Shell acuminately turbinated, imperforated, spire sharp, whorls angled round the upper part, longitudinally ribbed, ribs compressed, distant, transversely striated; white; aperture triangularly ovate, lip rather expanded, columella three-plaited.

*Hab.* —?

Resembling the preceding species in some respects, but more compactly convoluted, and more obtusely angled round the upper part of the whorls.

Species 70. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA TESSELLATA.** *Can. testā cylindraceo-oblongā, solidiusculā, imperforatā, spirā brevi, conicā, suturā parum impressā, anfractibus plano-convexis, granoso-decussatis; albidā, purpureo-ferrugineo fasciatā et interdum tessellatā; aperturā angustā oblongā, faucē liratā, columellā validè buplicatā, latè encausticā.*

**THE TESSELLATED CANCELLARIA.** Shell cylindrically oblong, rather solid, imperforated, spire short, conical, suture but little impressed, whorls flatly convex.

granosely decussated; whitish, banded and sometimes tessellated with purple-rust; aperture narrowly oblong, ridged within, columella strongly two-plaited, broadly enamelled.

SOWERBY, Pro. Zool. Soc. 1832, p. 51.

*Hab.* Bay of Caraccas, St. Elena, and Xipixapi, Central America (dredged from a sandy muddy bottom, at a depth of from seven to ten fathoms); Cuming.

Quite unlike any other species of the genus in its general typical form, as is sufficiently apparent in the figure.

Species 71. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA FOVEOLATA.** *Can. testā pyramidalis-ovalā, angustè umbilicatā, spirā exsertā, anfractibus ad suturam profundè declivi-excavatis, ad angulum obtusè carinatis, deinde plano-convexis, lævibus; carneo-fulvā, lineis pallidè fuscis cingulatā, aurantio-fusco ad angulum cingulatā; aperturā trigono-ovalā, labro crasse varicoso, columellā arcuatā, triplicatā.*

**THE TRENCHED CANCELLARIA.** Shell pyramidally ovate, narrowly umbilicated, spire exerted, whorls deeply slantingly excavated at the suture, obtusely keeled at the angle, then flatly convex, smooth; flesh-fulvous, encircled with faint brownish lines, blotched with orange-brown at the angles; aperture triangularly ovate, lip thickly varicose, columella arched, three-plaited.

SOWERBY, Pro. Zool. Soc. 1848, p. 137.

*Hab.* Algon Bay.

The excavated grooving of this species slants inward in a peculiar manner, whilst the shell is characterized by a faint linear pattern.

Species 72. (Fig. a, b, Mus. Cuming.)

**CANCELLARIA CORRUGATA.** *Can. testā oblongo-pyriformi, imperforatā, spirā exsertā, subobtusā, anfractibus declivi-convexis, longitudinaliter obsolete corrugatis, lineis impressis decussatis; fulvo-olivaceā; aperturā angustè oblongā, faucē liratā, columellā subattenuatā, buplicatā.*

**THE WRINKLED CANCELLARIA.** Shell oblong pear-shaped, imperforated, spire exerted, rather obtuse, whorls slantingly convex, longitudinally obsoletely wrinkled, decussated with impressed lines; fulvous-olive; aperture narrowly oblong, ridged within, columella rather attenuated, two-plaited.

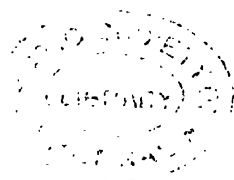
HINDS, Pro. Zool. Soc. 1843, p. 48.

*Hab.* Bay of Guayaquil (in mud, at the depth of seven fathoms); Hinds.

Of a very distinct typical form, peculiarly attenuated towards the base, and having no excavated indenture at the suture.









73a.



73b.



73c.



73d.



73e.

# CANCELLARIA.

PLATE XVI.

Species 73. (Fig. *a, b, c, d*, Mus. Cuming.)

CANCELLARIA SEMIPELLUCIDA. *Can. testā ovato-ventricosā, tenuiculā, minutissimè umbilicatā, spirā breviusculā, acutā, suturā profundè impressā, anfractibus superne rotundatis, longitudinaliter obliquè plicato-costatis, transversim tenuiliratis; fulvescente, subpellucidā; aperturā ovatā, ad basin attenuatā, columellā triplicatā.*

THE SEMITRANSSPARENT CANCELLARIA. Shell ovately ventricose, rather thin, very minutely umbilicated, spire rather short, sharp, suture deeply impressed, whorls rounded at the upper part, longitudinally obliquely plicately ribbed, transversely finely ridged; fulvous, subpellucid; aperture ovate, attenuated at the base, columella three-plaited.

ADAMS and REEVE, Moll. Voy. Samarang, p. 42. pl. 10. f. 3 and 3 a.

*Hab.* Sooloo Sea.

A light inflated shell, with the suture deeply impressed, peculiarly attenuated at the base.

Species 74. (Fig. *a, b*, Mus. Cuming.)

CANCELLARIA ANTIQUATA. *Can. testā ovatā, peramplius et profundè umbilicatā, spirā turratā, anfractibus ad suturam latè declivi-excavatis, ad angulum carinatis et muricatis, deinde acutè plicato-costatis, lævigatis; albā; aperturā parvā, trigonā, columellā subobsoletè biplicatā.*

THE ANTIQUATED CANCELLARIA. Shell ovate, very largely and deeply umbilicated, spire turreted, whorls broadly slantingly excavated at the suture, keeled and prickled at the angle, then sharply plicately ribbed, smooth; white; aperture small, triangular, columella rather obsoletely two-plaited.

HINDS, Moll. Voy. Sulphur, p. 43. pl. 12. f. 17, 18.

*Hab.* New Guinea (dredged from coarse sand, at the depth of twenty-two fathoms); Hinds.

This elegant little species has the largest umbilicus next

to the remarkable *C. trigonostoma*, the whorls being convoluted in the same peculiar manner.

Species 75. (Fig. *a, b*, Mus. Cuming.)

CANCELLARIA TENUIS. *Can. testā ovatā, tenuiculā, angustè profundè umbilicatā, spirā subpyramidalī, anfractibus ad suturam angustè declivi-excavatis, longitudinaliter laminato-costatis, transversim tenuiliratis; fulvescente; aperturā ovatā, ad basin attenuatā, columellā triplicatā.*

THE THIN CANCELLARIA. Shell ovate, rather thin, narrowly deeply umbilicated, spire subpyramidal, whorls narrowly slantingly excavated at the suture, longitudinally laminately ribbed, transversely finely ridged; fulvous; aperture ovate, attenuated at the base, columella three-plaited.

ADAMS, MS., Mus. Cuming.

*Hab.* — ?

A light semitransparent fulvous shell, chiefly distinguished by the thin laminar structure of the ribs.

Species 76. (Fig. *a, b*, Mus. Cuming.)

CANCELLARIA PURPURIFORMIS. *Can. testā oblongo-ovatā, imperforatā, spirā exsertā, subobtusā, anfractibus plano-convexis, longitudinaliter obsoletè plicatis, transversim linearisulcatis; fuscescente-albā; aperturā ovatā, columellā arcuatā, triplicatā.*

THE PURPURA-SHAPED CANCELLARIA. Shell oblong-ovate, imperforated, spire exerted, rather obtuse, whorls slightly convex, longitudinally obsoletely plicated, transversely linearly grooved; brownish-white; aperture ovate, columella arched, three-plaited.

VALENCIENNES, Kiener, Coquilles vivantes, *Cancellaria*, No. 27.

*Hab.* — ?

A simple oblong-ovate shell, without umbilicus or any depression at the suture.



2000000000

1000000000



774



754



756



758



776

white blue heli

cent. Brook. Imp

# CANCELLARIA.

PLATE XVII.

Species 77. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA MINIMA.** *Can. testā subfusiformi, imperforatā, spirā subelongatā, anfractibus rotundatis, oblique costatis, costis supernè obtusè nodosis, interstitiis nitidè cancellatis; albā, interdum fusciscente; columellā obsoletè bicipitatā.*

**THE VERY SMALL CANCELLARIA.** Shell subfusiform, imperforated, spire rather elongated, whorls rounded, obliquely ribbed, ribs obtusely noded at the upper part, interstices neatly cancellated; white, sometimes brownish; columella obsoletely two-plaited.

*Hab.* — ?

A minute species, obliquely ribbed, with the interstices neatly latticed with fine transverse ridges.

Species 78. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA NITIDA.** *Can. testā ovato-turritā, superficialiter umbilicatā, spirā acutā, anfractibus ad suturam angustè angulatis, costatis, costis compressis, valdè prominentibus, acutis, interstitiis lævigatis; albā, carneo-tinctā; aperturā subquadrato-ovatā, fauce liratā, columellā conspicuè triplicatā.*

**THE NEAT CANCELLARIA.** Shell ovately turreted, superficially umbilicated, spire sharp, whorls narrowly angled at the suture, ribbed, ribs compressed and very prominent, sharp, with the interstices smooth; white, flesh-tinged; aperture somewhat squarely ovate, ridged within, columella conspicuously three-plaited.

ADAMS, MS. Mus. Cuming.

*Hab.* — ?

Distinguished by its sharply developed ribs, which resemble those of *Scularia* more than in any other species.

Species 79. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA COCTILIS.** *Can. testā ovato-globosā, an-*

*gustè profundè umbilicatā, spirā breviusculā, acutā, anfractibus tumidis, supernè obtusè angulatis, rudè nodoso-costatis, transversim liratis; rufescente; aperturā subquadrato-ovatā, all basin attenuatā, columellā triplicatā.*

**THE BAKED CANCELLARIA.** Shell ovately globose, narrowly deeply umbilicated, spire rather short, sharp, whorls tumid, obtusely angled at the upper part, rudely nodosely ribbed, transversely ridged; reddish; aperture somewhat squarely ovate, attenuated at the base, columella three-plaited.

*Hab.* — ?

A shell of rather tumid growth, decussated with blunt noded ribs and ridges, of a peculiar reddish colour.

Fig. 80. (Mus. Cuming.)

The shell here figured proves to be a variety of *C. piscatoria* described at Pl. XII. Sp. 55.

Species 81. (Fig. *a, b*, Mus. Cuming.)

**CANCELLARIA TENIATA.** *Can. testā subfusiformi-turritā, imperforatā, spirā subgracili, anfractibus supernè plano-angulatis, longitudinaliter angustè costatis, subobsoletè decussatim liratis; fulvo-rufescente, fusco tæniatā; columellā bicipitatā.*

**THE FILLETED CANCELLARIA.** Shell somewhat fusiformly turreted, imperforated, spire rather slender, whorls flatly angled round the upper part, longitudinally narrowly ribbed, faintly decussately ridged; fulvous-red, filleted with brown; columella two-plaited.

SOWERBY, Pro. Zool. Soc. 1848, p. 137.

*Hab.* — ?

A slender turreted species, neatly filleted with narrow brown bands upon a fulvous-red ground.









353a.



352.



354.



351a.



351b.



355.



# CANCELLARIA.

## PLATE XVIII.

Species 82. (Fig. Thesaurus Conch.)

CANCELLARIA LACTEA. *Can. testā oblongo-ovatā, tenui, pellucidā, imperforatā, spirā subobtusā, anfractibus supernè declivi-convexis, lævigatis; lucteā; aperturā ovatā, fauce liratā, columellā validè triplicatā.*

THE CREAM-COLOURED CANCELLARIA. Shell oblong-ovate, thin, transparent, imperforated, spire rather obtuse, whorls slantingly convex round the upper part, smooth; cream-coloured; aperture ovate, interior ridged, columella strongly three-plaited.

DESHAYES, Encyclopédie Méthodique, p. 180. Sowerby, Thesaurus Conch. vol. ii. p. 448. pl. 96. f. 105.

Hab. — ?

This species is unknown to me. The accompanying figure is from Mr. Sowerby's 'Thesaurus Conchyliorum.'

Species 83. (Fig. Moll. Voy. Sulphur.)

CANCELLARIA ELATA. *Can. testā ovatā, elongatā, acuminatā, anfractibus costatis, supernè angulatis, lineis elevatis decussatis, suturā profundā; aperturā ovali, peritremate supernè disjuncto, labro intus sulcato, columellā triplicatā, plicā inferiore maximā, umbilico parvo, suboculto, canali inflexo.*

THE RAISED CANCELLARIA. Shell ovate, elongated, acuminate, whorls ribbed, angulated at the upper part, decussated with raised lines, suture deep; aperture oval, peritreme disjoined at the upper part, lip grooved within, columella three-plaited, lower plait the largest, umbilicus small, somewhat concealed, canal inflected.

HINDS, Moll. Voy. Sulphur, p. 42. pl. 12. f. 3, 4.

Hab. Panama (at the depth of thirty fathoms); Hinds.

This species is also unknown to me. The description and figure are Mr. Hinds' in the Mollusca of the Voyage of the Sulphur.

Fig. 15 c, d, e. (Mus. Cuming.)

The specimens here represented are varieties, which it seems desirable to figure, of *C. Buccinoides*, described at Plate IV.

Species 84. (Fig. a, b, Mus. Cuming.)

CANCELLARIA BULBULUS. *Can. testā oblongo-pyriformi, subventricosa, solidā, imperforatā, basi angustè attenuatā, spirā parvā, validè decussatim plicatā, suturā rudè impressā, anfractu ultimo supernè declivi, lævi-*

*gato; fulcā; aperturā angustè oblongā, columellā triplicatā, plicā supremā valūissimā.*

THE LITTLE BULB CANCELLARIA. Shell oblong-pyriform, subventricose, solid, imperforated, narrowly attenuated at the base, spire small, strongly decussately plicated, suture rudely impressed, last whorl slanting round the upper part, smooth; fulvous; aperture narrowly oblong, columella three-plaited, uppermost plait very strong.

OWERBY, Pro. Zool. Soc. 1832, p. 55.

Hab. Real Llejos, Central America.

Very closely allied to *C. pyrum*, from which it differs in being of a more attenuately oblong form.

Species 85. (Fig. Thesaurus Conch.)

CANCELLARIA VIRIDULA. *Can. testā oblongā, longitudinaliter obscure costatā, spiraliter costatā, spirā acuminatā, anfractibus rotundatis, suturā validā; aperturā brevi, lævi, columellā obsolete plicatā; colore nullo, epidermide pallide virescente.*

THE GREENISH CANCELLARIA. Shell oblong, longitudinally obscurely ribbed, spirally ribbed, spire acuminate, whorls rounded, suture strong; aperture short, smooth, columella obsolete plaited; colour none, with a pale green epidermis.

Admete viridula, Gould. Sowerby, Thesaurus Conch. vol. ii. p. 449. pl. 96. f. 102.

Hab. — ?

Unknown to me. Description and figure copied from Mr. Sowerby's 'Thesaurus Conchyliorum.'



Species 86. (Fig. Gould Invert. Mass.)

CANCELLARIA COUTHOUYI. *Can. testā ovato-conicā, albā, lineis rudibus spiralibus et concentricis decussatā, columellā triplicatā.*

COUTHOUY'S CANCELLARIA. Shell ovately conical; white, reticulated with coarse revolving lines, and lines of growth, columella three-plaited.

JAY, Catalogue, 1839.

Cancellaria Buccinoides, Couthouy, Boston Journ. Nat. Hist. vol. ii. p. 105. pl. 3. f. 3.

Hab. Massachusetts Bay, United States (found in fishes); Gould.

This little shell Dr. Gould describes in his Report of the Invertebrata of Massachusetts, as being somewhat abundant, and usually occupied by a hermit crab.



# CANCELLARIA.

	Plate.	Species.		Plate.	Species.
<i>acuminata</i> , Sowerby . . . . .	I.	4	<i>Littorinæformis</i> , Sowerby . . . . .	XIII.	62
<i>affinis</i> , Reeve . . . . .	IX.	39	<i>lyrata</i> , Adams and Reeve . . . . .	XV.	68
<i>albida</i> , Hinds . . . . .	X.	45	<i>macrospira</i> , Adams and Reeve . . . . .	XI.	50
<i>antiquata</i> , Hinds . . . . .	XVI.	74	<i>Mangelioides</i> , Reeve . . . . .	XV.	69
<i>articularis</i> , Sowerby . . . . .	XII.	54	<i>melanostoma</i> , Sowerby . . . . .	VI.	26
<i>asperella</i> , Lamarck . . . . .	IV.	17	<i>minima</i> , Reeve . . . . .	XVII.	77
<i>australis</i> , Sowerby . . . . .	X.	44	<i>Mitriformis</i> , Sowerby . . . . .	XI.	49
<i>bicolor</i> , Hinds . . . . .	VII.	29	<i>nitida</i> , Adams . . . . .	XVII.	78
<i>bifasciata</i> , Deshayes . . . . .	VI.	27	<i>nodulifera</i> , Sowerby . . . . .	II.	6
<i>brevis</i> , Sowerby . . . . .	IX.	40	<i>nodulosa</i> , Lamarck . . . . .	XII.	55
<i>Buccinoides</i> , Sowerby . . . . .	IV.	15	<i>obesa</i> , Sowerby . . . . .	II.	7
<i>Buccinoides</i> , Couthouy . . . . .	XVIII.	86	<i>obliquata</i> , Lamarck . . . . .	XIII.	61
<i>bulbulus</i> , Sowerby . . . . .	XVIII.	84	<i>oblonga</i> , Kiener . . . . .	VI.	27
<i>bullata</i> , Sowerby . . . . .	II.	5	<i>obtusa</i> , Deshayes . . . . .	VIII.	37
<i>cancellata</i> ( <i>Voluta</i> ), Linn. . . . .	III.	13	<i>ovata</i> , Sowerby . . . . .	IV.	18
<i>candida</i> , Sowerby . . . . .	X.	46	<i>piscatoria</i> ( <i>Buccinum</i> ), Gmel. . . . .	XII.	55
<i>Cassidiformis</i> , Sowerby . . . . .	II.	8	<i>pulchra</i> , Sowerby . . . . .	VIII.	38
<i>chrysostoma</i> , Sowerby . . . . .	VII.	31	<i>Purpuriformis</i> , Valenc. . . . .	XVI.	76
<i>clathrata</i> , Adams . . . . .	XIV.	64	<i>pusilla</i> , Sowerby . . . . .	IX.	42
<i>clavatulæ</i> , Sowerby . . . . .	XI.	52	<i>pyrum</i> , Adams and Reeve . . . . .	IV.	14
<i>coctilis</i> , Reeve . . . . .	XVII.	79	<i>reticulata</i> ( <i>Voluta</i> ), Linn. . . . .	I.	3
<i>contabulata</i> , Sowerby . . . . .	IX.	42	<i>rigida</i> , Sowerby . . . . .	VII.	33
<i>corrosa</i> , Reeve . . . . .	XIV.	64	<i>rugosa</i> , Lamarck . . . . .	XIII.	60
<i>corrugata</i> , Hinds . . . . .	XV.	72	<i>scalarina</i> , Lamarck . . . . .	VI.	25
<i>costata</i> , Sowerby . . . . .	VII.	33	<i>scalata</i> , Sowerby . . . . .	V.	19
<i>costifera</i> , Sowerby . . . . .	XII.	57	<i>semi-disjuncta</i> , Sowerby . . . . .	XIII.	58
<i>Couthouyi</i> , Jay . . . . .	XVIII.	86	<i>semipellucida</i> , Adams and Reeve . . . . .	XVI.	73
<i>crenifera</i> , Sowerby . . . . .	VI.	24	<i>serrata</i> , Reeve . . . . .	XIV.	63
<i>crispata</i> , Sowerby . . . . .	IX.	43	<i>similaris</i> , Sowerby . . . . .	III.	10
<i>Cumingiana</i> , Petit . . . . .	I.	1	<i>Sinensis</i> , Reeve . . . . .	VIII.	35
<i>decussata</i> , Sowerby . . . . .	V.	22	<i>solida</i> , Sowerby . . . . .	I.	2
<i>Eburnæformis</i> , Reeve . . . . .	V.	21	<i>Spengleriana</i> , Deshayes . . . . .	III.	11
<i>elata</i> , Hinds . . . . .	XVIII.	83	<i>spirata</i> , Lamarck . . . . .	XII.	56
<i>elegans</i> , Sowerby . . . . .	III.	12	<i>tæniata</i> , Sowerby . . . . .	XVII.	81
<i>excavata</i> , Sowerby . . . . .	XII.	53	<i>tenuis</i> , Adams . . . . .	XVI.	75
<i>foveolata</i> , Sowerby . . . . .	XV.	71	<i>tessellata</i> , Sowerby . . . . .	XV.	70
<i>funiculata</i> , Hinds . . . . .	XV.	68	<i>textilis</i> , Kiener . . . . .	VI.	28
<i>gemmulata</i> , Sowerby . . . . .	X.	48	<i>trigonostoma</i> ( <i>Delphinula</i> ), Lam. . . . .	XI.	51
<i>goniostoma</i> , Sowerby . . . . .	VII.	32	<i>Tritonis</i> , Sowerby . . . . .	III.	12
<i>granosa</i> , Sowerby . . . . .	V.	20	<i>tuberculosa</i> , Sowerby . . . . .	VIII.	36
<i>hamastoma</i> , Sowerby . . . . .	VII.	30	<i>undulata</i> , Sowerby . . . . .	III.	9
<i>hystrix</i> , Reeve . . . . .	XIV.	67	<i>uniplicata</i> , Sowerby . . . . .	XI.	49
<i>imperialis</i> , Michelin . . . . .	II.	6	<i>urceolata</i> , Hinds . . . . .	V.	23
<i>indentata</i> , Sowerby . . . . .	IX.	41	<i>ventricosa</i> , Hinds . . . . .	X.	47
<i>lactea</i> , Deshayes . . . . .	XVIII.	82	<i>Verreauxii</i> , Kiener . . . . .	XIII.	59
<i>lævigata</i> , Sowerby . . . . .	VIII.	34	<i>viridula</i> ( <i>Admete</i> ), Gould . . . . .	XVIII.	85
<i>lamellosa</i> , Hinds . . . . .	XIV.	65			



MONOGRAPH  
OF THE GENUS  
L I T T O R I N A.

---

“ It sees the ocean to its bosom clasp  
The rocks and sea-sand with the kiss of peace ;  
It sees the wild winds lift it in their grasp,  
And hold it up, and shake it like a fleece.

“ The startled waves leap over it ; the storm  
Smites it with all the scourges of the rain,  
And steadily against its solid form  
Press the great shoulders of the hurricane.”

*Longfellow.*

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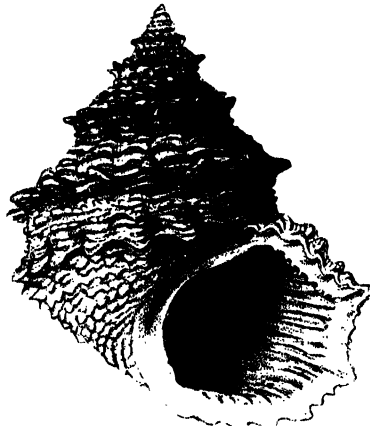
*1a.*



*2.*



*3.*



*4.*



*1b.*



*1c.*



*1d.*

# LITTORINA.

## PLATE I.

### Genus LITTORINA, *Férussac*.

*Testa turbinata, conico-ovata, vel subglobosa, plerumque solidida, raro umbilicata; spirâ sæpius breviusculâ, acutâ; anfractibus aut levibus aut lineari-sulcatis, infernè interdum tenuicarinaris; aperturâ subcirculari, columellâ sæpe plus minus latè excavatâ. Operculum corneum, pyriformi-circulare.*

Shell turbinated, conically ovate, or subglobose, generally solid, rarely umbilicated; spire generally rather short, sharp; whorls either smooth or linear-grooved, sometimes thinly keeled at the lower part; aperture nearly circular, columella often more or less broadly excavated. Operculum horny, pyriformly circular.

The *Littorinæ* or Periwinkles are a group of turbinated shells, mostly small, inhabiting the sea-shore in all parts of the world between tide-marks, or living on the branches of trees within range of the spray. The few species known to Lamarck were referred to his genera *Turbo*, *Monodonta*, and *Phasianella*. De Férussac first collected them into a genus, taking the old Linnæan *Turbo littoreus*, or common edible Periwinkle of our shores, as the type; and Deshayes described it in detail in his notes to the new edition of the 'Animaux sans Vertèbres.' In 1845 Dr. Philippi examined the *Littorinæ* in Mr. Cuming's collection, describing twenty-one new species in the 'Proceedings of the Zoological Society,' and published subsequently a monograph of the group in his 'Abbildungen,' in which a hundred and twelve species are enumerated; more however are set down there as species than we feel justified in adopting.

Of the genera into which the group has been further subdivided, the most natural is that section named *Tectarius*, of which the Linnæan *Turbo pagodus* is the type. But we have the authority of Deshayes and MM. Quoy and Gaimard for stating that its animal and horny operculum are similar in all respects to the typical *L. littorea*.

It would be in vain to attempt to show any speciality of geographical range in the *Littorinæ*. From Sitka in the north to New Zealand and Valparaiso in the south they are distributed along the shores both of the eastern and western intermediate continents and islands. In their natural habitats they generally represent tidal zones on the rocks, and in Borneo and such swampy localities they live commonly on the branches of the Mangrove-trees.

### Species 1. (Fig. a, b, c, d, Mus. Cuming.)

*LITTORINA BULLATA.* *Litt. testâ obliquè conicâ, trochiformi, crassâ, imperforatâ, aurantio-lactèâ, fasciis fuscâ vel nigricante-griseis cingulatâ, transversim rugoso-striatâ, et papilloâ, papillis nunc oblongis et plus minus obsolete, nunc echinatis, prominentibus, et numerosis.*

THE HUBBLED LITTORINA. Shell obliquely conical, trochus-shaped, thick, imperforated, orange-cream-colour, sometimes encircled with brown or blackish-grey bands, transversely roughly striated and papillose, papillæ sometimes oblong, and more or less obsolete, sometimes prickly, prominent, and numerous.

*Trochus bullatus*, Martyn, Universal Conchologist, pl. 38.

*Trochus grandinatus*, Chemnitz.

*Monodonta papillosa*, Lamarck.

*Littorina papillosa*, Deshayes.

*Tectarius papillosus*, Adams.

*Hab.* Zanzibar, North Australia, and New Zealand.

The varieties of this extremely variable species are distinguished by Philippi in his 'Abbildungen' as vars. *elegans*, *quadriseriata*, *rustica*, *subnervis*, and *vera*. The division is but an artificial one, though characteristic of as many typical states of the species. The differences consist mainly in the development of the papillæ-like nodules of the shell, which may be observed in all gradations, from prickly protuberances, to oblong, more or less obsolete, compressed tubercles.

### Species 2. (Mus. Cuming.)

*LITTORINA CORONARIA.* *Litt. testâ pyramidal-conicâ, crassâ, imperforatâ, lactèâ, anfractibus superne concavo-declivibus, subangulatis, striatis et carinatis, carinis undique muricato-nodulatis, columellâ subcontortâ, basi crenatâ.*

THE GARLAND LITTORINA. Shell pyramidally conical, thick, imperforated, cream-coloured, whorls concavely slanting at the upper part, slightly angled, striated and keeled, keels everywhere prickly noded, columella somewhat twisted, notched at the base.

*Monodonta coronaria*, Lamarck, Anim. sans vert. vol. ix. p. 174. Enc. Méth. pl. 447. f. 6.

*Littorina coronaria*, Philippi.

*Echinella coronaria*, Adams.

*Hab.* Philippine Islands; Cuming.

This species may be readily distinguished from all varieties of the preceding by its more pyramidal form, smaller, prickly sculpture, and more concave growth at the suture.

Species 3. (Mus. Cuming.)

**LITTORINA TECTUM-PERSICUM.** *Litt. testā obliquè conicā, crassā, imperforatā, lactēā, fusco tinctā et lineatā, transversim striatā, et tuberculatā, tuberculis rudibus, prominentibus, declivibus, plus minus irregularibus, columellā basi crenulatā.*

**THE PERSIAN-ROOF LITTORINA.** Shell obliquely conical, thick, imperforated, cream-coloured, stained and lined with brown, transversely striated and tubercled, tubercles rude, prominent, slanting, more or less irregular, columella slightly notched at the base.

*Turbo tectum-Persicum*, Linnaeus, Syst. Nat. p. 1234.

*Monodonta tectum-Persicum*, Lamarck.

*Littorina tectum-Persicum*, Deshayes.

*Hab.* — ?

Intermediate in its characters, between *L. bullata* and *pagodus*, and subject apparently to limited variation.

Species 4. (Mus. Cuming.)

**LITTORINA PAGODUS.** *Litt. testā obliquè conicā, acutā, crassā, solidā, imperforatā, fuscescente-lactēā, fusco tinctā et lineatā, anfractibus rugoso-striatis, et compressè nodulatis, supernè declivibus, rudè subplicatis, anfractu ultimo conspicuè bituberculato.*

**THE PAGODA LITTORINA.** Shell obliquely conical, sharp, thick, solid, imperforated, brownish cream-colour, stained and lined with brown, whorls roughly striated and compressly noded, slanting round the upper part, rudely subplicated, last whorl conspicuously bitubercled.

*Turbo pagodus*, Linnæus, Syst. Nat. p. 1234.

*Trochus pagodus*, Chemnitz.

*Monodonta pagodus*, Lamarck.

*Littorina pagodus*, Deshayes.

*Tectarius pagodus*, Guérin.

This well-known species is chiefly remarkable for its uniformly large size and more angular sharp growth, the entire surface being more or less plicately striated and tubercled, the tubercles on the last whorl being developed in a prominent double row.





6.



7.



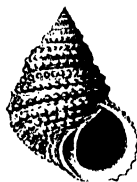
8.



9.



10.



11.



12.



13.



# LITTORINA.

## PLATE II.

### Species 5. (Mus. Cuming.)

LITTORINA SPINULOSA. *Litt. testā conicā, acutā, angustē profundē umbilicatā, umbilico interdum oblecto, rufo-carneā, anfractibus rugoso-striatis, declivi-angulatis, seriatim minutē nodulatis.*

THE SPINED LITTORINA. Shell broadly conical, sharp, narrowly deeply umbilicated, umbilicus sometimes covered, reddish flesh-colour, whorls roughly striated, slantingly angled, sculptured with rows of small nodules.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 17. pl. 6. f. 24.

Hab. Singapore; Cuming.

The reddish flesh-colouring of this species, as compared with the uniform livid-grey that prevails in the group, is not among the least characteristic of its peculiarities.

### Species 6. (Mus. Cuming.)

LITTORINA LEMNISCATA. *Litt. testā angustē conicā, imperforatā, nigrā, striis transversis et granulorum seriebus tribus, basi obscure albifasciatā, columellā concavo-effusā.*

THE FILLETED LITTORINA. Shell narrowly conical, imperforated, black, sculptured with transverse striae and three rows of granules, base obscurely white-banded, columella concavely effused.

PHILIPPI, Pro. Zool. Soc. 1845, p. 139.

Hab. Cuba?

A small pyramidally conical shell, sculptured with raised transverse lines and granules.

### Species 7. (Mus. Cuming.)

LITTORINA MALACCANA. *Litt. testā subulatē conicā, acutā, nigricante-griseā, anfractibus supernē declivibus, transversim striatis, granulis albicantibus biserialim cingulatis.*

THE MALACCA LITTORINA. Shell somewhat broadly conical, sharp, blackish-grey, whorls slanting at the upper part, transversely striated, encircled with two rows of whitish granules.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 15. pl. 6. f. 17.

Hab. Pulo Renang, Malacca.

More tumid in the lower whorl than the preceding species, with the granules whitish.

### Species 8. (Mus. Cuming.)

LITTORINA CUMINGII. *Litt. testā abbreviato-conicā, profundē umbilicatā, acutā, carneo-cinereā, anfractibus supernē plano-declivibus, minutē squamulato-striatis, squamis muricatis prominentibus biserialim cingulatis, basi multi-squamulātā.*

CUMING'S LITTORINA. Shell shortly conical, deeply umbilicated, sharp, flesh-tinged ash-colour, whorls flatly slanting at the upper part, minutely squamulately striated, encircled with two rows of prominent prickly scales, base many-scaled.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 17. pl. 6. f. 22.

*Echinella Cumingii*, Adams.

Hab. Island of Guimaras, Philippines.

This very beautiful species is prominently distinguished by its winding periphery of prickly scales and deep umbilicus.

### \* Species 9. (Mus. Cuming.)

LITTORINA DILATATA. *Litt. testā subpyramidal-conicā, crassiusculā, imperforatā, livido-griseā, nodulis albis cingulatā, anfractibus supernē declivibus, columellā latē concavo-dilatātā, purpurascēte-fuscā.*

THE DILATED LITTORINA. Shell subpyramidally conical, rather thick, imperforated, livid-grey, encircled with white nodules, whorls slanting at the upper part, columella broadly concavely dilated, purplish-brown.

D'ORBIGNY, Moll. Cuba, p. 207. pl. 14. f. 20-23.

Hab. Cuba.

Chiefly remarkable for the broadly excavated purple-brown columella, and conspicuous white nodules upon a livid-grey ground.

### Species 10. (Mus. Cuming.)

LITTORINA SUBNODOSA. *Litt. testā ovato-conicā, solidā, imperforatā, griseā, purpureo-fusco tessellatā, transversim triliratā, liris distantibus tenuē nodulatis; aperturā parvisculā, purpureo-fuscā.*



## LITTORINA.—PLATE II.

**THE SUBNODOSE LITTORINA.** Shell ovately conical, solid, imperforated, grey, tessellated with purple-brown, transversely three-ridged, ridges distant, finely noded; aperture rather small, purple-brown.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 19. pl. 3. f. 8 and 9.

*Hab.* Red Sea.

A solid, rather tumid species, encircled with three rather distant, finely noded ridges, tessellated with rich purple-brown, and having the columnella and interior deeply stained with the same colour.

### Species 11. (Mus. Cuming.)

**LITTORINA MURICATA.** *Litt. testā ovato-conicā, acutā, angustā excavato-umbilicatā, violascente-cinereā, anfractibus rotundatis, ad suturam subimpressis, striatis, nodulis granularibus undique seriatim sculptis.*

**THE PRICKLY LITTORINA.** Shell ovately conical, sharp, narrowly excavately umbilicated, violet-ash, whorls rounded, rather impressed at the suture, striated, encircled throughout with rows of granuled nodules.

*Turbo muricatus*, Linnaeus, Syst. Nat. 12th edit. p. 1232.

*Læ Bosc.*, Adanson.

*Littorina muricata*, Deshayes.

*Hab.* West Africa, Cuba, Honduras.

In this species the whorls are more rounded and the suture more impressed than in its congeners, and the granulated sculpture is more defined.

### Species 12. (Mus. Cuming.)

**LITTORINA VILIS.** *Litt. testā pyramidal-conicā, acutā, imperforatā, transversim elevato-striatā, virescente-griseā, anfractibus supernè plano-declivibus, nodulis albidis medio biserialim cinctis, aperturā purpureo-fuscā.*

**THE WORTHLESS LITTORINA.** Shell pyramidally conical, sharp, imperforated, transversely elevately striated, greenish-grey, whorls flatly slanting round the upper part, encircled round the middle with two rows of white nodules, aperture purple-brown.

MENKE, Philippi, Abbild. und Besch. Conch. vol. ii. p. 15. pl. 2. f. 21.

*Hab.* New Zealand.

Distinguished from the allied species by its more slender, sharply pyramidal form.

### Species 13. (Mus. Cuming.)

**LITTORINA NODOSA.** *Litt. testā obovatā, tumidiusculā, imperforatā, spirā brevi, acutā, anfractibus supernè declivibus, deinde convexis, liris linearibus et nodulis tenuibus muricatis cingulatis, fusco-griseā, rufo linctā, columellā latè excavatā, aperturā fauce fuscā.*

**THE NODOSE LITTORINA.** Shell broadly ovate, rather swollen, imperforated, spire short, sharp, whorls slanting round the upper part, then convex, encircled with linear ridges and fine prickly nodules, fuscous-grey, stained with red, columella broadly excavated, interior of aperture brown.

GRAY, Zoology of Beechey's Voyage, p. 189.

*Hab.* North coast of Australia.

A shortly conoid swollen species, with a somewhat *Purpura*-like aspect, sculptured with fine granose nodules.

### Species 14. (Mus. Cuming.)

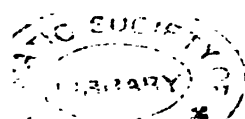
**LITTORINA PYRAMIDALIS.** *Litt. testā pyramidal-ovatā, imperforatā, spirā turrilā, anfractibus supernè concavo-declivibus, deinde angulatis, et tuberculorum seriebus duabus conspicuè cingulatis, purpureo-adsatā, aperturā parvā, columellā latissimè excavatā, purpurascenē, basi subproductā.*

**THE PYRAMIDAL LITTORINA.** Shell pyramidally ovate, imperforated, spire turreted, whorls concavely slanting at the upper part, then angled, and conspicuously encircled with two rows of tubercles, purple-brown, aperture small, columella very broadly excavated, purplish, rather produced at the base.

QUOY and GAIMARD, Voy. de l'Astrolabe, vol. ii. pl. 33. f. 12-15.

*Hab.* New Zealand.

A rather abnormal form of the genus, quite peculiar in its characters.





15a.



15b.



15c.



16a.



17a.



17b.



# LITTORINA.

## PLATE III.

Species 15. (Fig. b, c, Mus. Cuming.)

**LITTORINA AHENEA.** *Litt. testā ovato-turbinatā, imperforatā, spirā aculā, suturā impressā, anfractibus convexis, densè scabroso-striatis; albidā vel lutescente, cinereo-fusco et cæruleo variè obliquè strigatā seu lentiginosā.*

**THE BRONZED LITTORINA.** Shell ovately turbinated, imperforated, spire sharp, suture impressed, whorls convex, densely scabrously striated; whitish or yellowish, variously obliquely streaked or freckled with ash-brown and blue.

*Hab.* Senegal.

The two shells here represented, from Mr. Cuming's collection, were figured by Dr. Philippi in his 'Abbildungen,' pl. 5. fig. 13 and 14, as varieties of *L. angulifera*, Lamarek. They appear to me, on further examination and comparison, to belong to different species. Fig. 15 a I take to be a variety of *L. scabra*, described at Pl. 5. Sp. 21, while the shell Fig. 15 b and 15 c appears not to have been described.

Species 16. (Fig. a, b, Mus. Cuming.)

**LITTORINA GRANDIS.** *Litt. testā obliquè turbinatā, crassā, solidā, imperforatā, anfractibus supernè concaviusculis, levibus vel obsolete carinatis, versus apicem striatis; cærulescente-griseā, carinis interruptè nigricante-fuscis, columellā latè callosā, albā, labro fusco maculato.*

**THE LARGE LITTORINA.** Shell obliquely turbinated,

thick, solid, imperforated, whorls slightly concave round the upper part, smooth or obsolete keeled, striated towards the apex; bluish-grey, keels interruptedly blackish-brown, columella broadly callous, white, lip spotted with brown.

*MIDDENDORF*, Beit. Malac. Rossien, part 2. p. 57.

*Hab.* Island of Schantar, Sea of Ochotsk; Middendorf.

A fine species of solid massive growth, of a bluish-grey colour, encircled with narrow interrupted black-brown bands, indicating keels that with age have become obsolete.

Species 17. (Fig. a, b, Mus. Cuming.)

**LITTORINA PULCHRA.** *Litt. testā ovato-turgidā, imperforatā, apice aculā, anfractibus densè lirato-striatis, supernè concavo-declivibus; aurantio-rufescente, flammulis atratis obliquis strigatā, columellā latè excavatā.*

**THE BEAUTIFUL LITTORINA.** Shell ovately turgid, imperforated, apex sharp, whorls densely ridge-striated, concavely slanting at the upper part; orange-red, streaked with oblique black flames, columella broadly excavated.

*SOWERBY*, Genera of Shells, *Littorina*, f. 2, 3.

*Hab.* Panama.

Another fine species, better known to collectors than the preceding, distinguished by its conspicuous pattern of obliquely waved stripes upon a rich orange-red ground.

May, 1857.







18a.



18a



18b.



18b.



18c



18d.



# LITTORINA.

## PLATE IV.

Species 18. (Fig. a, b, c, d, Mus. Cuming.)

LITTORINA LITTOREA. *Litt. testā ovato-turbinatā, imperforatā, crassā, laevigatā vel spiraliter elevato-striatā, anfractibus interdum superne concavo-impressis; olivaceā, aut cinereā, aut rufā, nigricante interdum fasciatā et lineatā; columellā latē callosā, subexcavatā, albā.*

THE SHORE LITTORINA. Shell ovately turbinated, imperforated, thick, smooth or spirally elevately striated, whorls sometimes concavely impressed round the upper part; olive, or ash, or red, sometimes banded and lineated with black; columella broadly callous, slightly excavated, white.

*Turbo littoreus*, Linnæus, Syst. Nat. p. 1232.

*Turbo ustulatus*, Lamarek.

*Littorina vulgaris*, Sowerby.

*Littorina littorea*, Johnston.

Hab. Atlantic shores of Europe.

Of this species, the well-known eatable Periwinkle of our market, we have selected four varieties, differing in colour and even in form, so far as regards the angular depression of the upper portion of the whorls.

Species 19. (Fig. a, b, Mus. Cuming.)

LITTORINA VARIA. *Litt. testā acuminato-ovatā, imperforatā, crassiusculā, densè irregulariter carinatā, prope suturam canaliculatā; lutescente-albā, lineis nigris*

*undique tessellato-lentiginosā; columellā sublatē excavatā, margine nigro-lineato.*

THE VARIED LITTORINA. Shell acuminate ovate, imperforated, rather thick, densely irregularly keeled, somewhat channelled next the suture; yellowish-white, everywhere tessellately freckled with black lines; columella rather broadly excavated, margin black-lined.

SOWERBY, Genera of Shells, No. 37.

Hab. Panama.

A prettily marked species, densely irregularly keeled throughout.

Species 20. (Mus. Cuming.)

LITTORINA FASCIATA. *Litt. testā ovato-turbinatā, subventricosā, imperforatā, laevigatā; albidā, fasciis lineisque fusco-griseis obliquè undatā; aperturā subcontractā, columellā latē excavatā, margine fusco-lineato.*

THE BANDED LITTORINA. Shell ovately turbinated, somewhat ventricose, imperforated, smooth; whitish, obliquely waved with brownish-grey bands and lines; aperture somewhat contracted, columella broadly excavated, margin brown-lined.

GRAY, Zool. Beechey's Voyage, p. 139.

Hab. Tumbes, Peru; Cuming.

A fine bold species, lineated and obliquely banded, characterized by a dark blotch upon the columellar area, which is more than usually twisted.











22 a.



22 b.



23 b.



23 c.



24 c.



24 a.



24 b.



24 d.

# LITTORINA.

## PLATE V.

Species 21. (Fig. *a, b*, Mus. Cuming.)

**LITTORINA SCABRA.** *Litt. testā acuminato-ovatā, tenuiculā, anfractibus declivi-convexis, spiraliter dense liris, striā elevatā sæpè inter liras decurrente, infernè obsolete unicarinalis; lutescente aut rosā, nunc oblique fusco strigatā et punctatā, nunc immaculatā; aperturā subcontractā, columellā excavato-appressā.*

**THE SCABROUS LITTORINA.** Shell acuminate ovate, rather thin, whorls slantingly convex, spirally densely ridged, with a raised stria often running between the ridges, obsolete keeled towards the lower part; yellowish or rose, sometimes obliquely streaked and dotted with brown, sometimes unspotted; aperture rather contracted, columella excavately appressed.

*Helix scabra*, Linnaeus, Syst. Nat. p. 1243.

*Phasianella angulifera*, Lamarck.

*Littorina scabra*, Philippi.

*Hab.* Philippine Islands; Cuming.

Mostly characterized by a painting of oblique interrupted dark-brown streaks, though it has varieties of yellow or rose-colour entirely without marking.

Species 22. (Fig. *a, b*, Mus. Cuming.)

**LITTORINA PHILIPPIANA.** *Litt. testā acuminato-ovatā, tenui, anfractibus declivi-convexis, spiraliter regulariter filoso-liratis, interstitiis oblique longitudinaliter striatis, infernè obsolete carinalis; purpurascens apicem, obscure punctatā, versus apicem rufā; aperturā subcontractā, columellā appressā, purpurascens.*

**PHILIPPI'S LITTORINA.** Shell acuminate ovate, thin, whorls slantingly convex, spirally regularly thread-ridged, interstices obliquely longitudinally striated, obsolete keeled at the lower part; purple-fawn, obscurely dotted, red towards the apex; aperture rather contracted, columella appressed, purplish.

*Hab.* Philippine Islands; Cuming.

This species very closely resembles the *L. Sieboldii*, which immediately follows, but the spiral ridges are of a

finer thread-like character, and there is more transparency in the substance of the shell.

Species 23. (Fig. *a, b*, Mus. Cuming.)

**LITTORINA SIEBOLDII.** *Litt. testā acuminato-ovatā, tenuiculā, anfractibus declivi-convexis, spiraliter carinato-liratis, striā elevatā inter liras decurrente; lutescente-spadicēā, obscure punctatā; aperturā subcontractā, columellā excavato-appressā.*

**SIEBOLD'S LITTORINA.** Shell acuminate ovate, rather thin, whorls slantingly convex, spirally keel-ridged, with a raised stria running between the ridges; yellowish-fawn, obscurely dotted; aperture rather contracted, columella excavately appressed.

*PHILIPPI*, Pro. Zool. Soc. 1845, p. 142. Abbild. und Besch. Conch. pl. 6. f. 3.

*Hab.* Japan.

A fine acuminated species, of rather solid growth, spirally keel-ridged throughout with great regularity.

Species 24. (Fig. *a, b, c*, Mus. Cuming.)

**LITTORINA FILOSA.** *Litt. testā acuminato-ovatā, tenui, subcentricā, anfractibus convexis, spiraliter filoso-liratis, liris regularibus, subdistantibus, striā elevatā inter liras rarè decurrente; cinereo-griseā aut rosā, fusco sæpè promiscuè punctatā; aperturā subrotundā, columellā tenuè contortā.*

**THE THREAD-BOUND LITTORINA.** Shell acuminate ovate, thin, somewhat ventricose, whorls convex, spirally thread-ridged, ridges regular, rather distant, with rarely a raised stria running between the ridges; ash-grey or rose, often promiscuously dotted with brown; aperture nearly round, columella thinly twisted.

*SOWERBY*, Genera of Shells, *Littorina*, f. 5.

*Hab.* Island of Zebu, Philippine Islands (on the rocks at half-tide); Cuming.

Of light substance, with the thread-like ridges more than usually distant, while the columella is peculiar in being thinly contorted.







26a.



25.



28a.



27.



29b.



28c.

# LITTORINA.

## PLATE VI.

### Species 25. (Mus. Cuming.)

**LITTORINA CINGULATA.** *Litt. testā conico-ovatā, solidiusculā, anfractibus convexis, spiraliter filoso-costatis, interstitiis dense elevato-striatis; cinereo-rufā, costis pallidis, obscure maculatis; aperturā parviusculā, columellā subcallosā, albā.*

**THE BELTED LITTORINA.** Shell conically ovate, rather solid, whorls convex, spirally thread-ribbed, interstices densely elevately striated; ash-red, ribs pale, obscurely spotted; aperture rather small, columella rather callous, white.

PHILIPPI, Pro. Zool. Soc. 1845, p. 142.

*Hab.* North coast of New Holland; Dring.

Distinguished by its strong spiral ridges, the interstices between which are prominently excavated and of darker colour.

### Species 26. (Fig. a, b, Mus. Cuming.)

**LITTORINA CASTANEA.** *Litt. testā subglobo-ovatā, solidiusculā, spirā brevī, anfractibus supernē depressiusculis, deinde columatis et spiraliter carinatis, carinis regularibus, substantibus; intense rufo-castaneā; aperturā circulari, columellā latē callosā.*

**THE CHESTNUT LITTORINA.** Shell somewhat globosely ovate, rather solid, spire short, whorls somewhat depressed at the upper part, then rounded and spirally keeled, keels regular, rather distant; deep reddish-chestnut; aperture circular, columella broadly callous.

ADAMS and REEVE, Moll. Voy. Samarang, p. 49. pl. 11. f. 8.

*Hab.* Eastern Seas; Belcher.

Of a dark reddish-chestnut colour, encircled throughout with strong, rather distant keels.

### Species 27. (Fig. a, b, Mus. Cuming.)

**LITTORINA ARBORICOLA.** *Litt. testā acuminato-ovatā, tenuiculā, anfractibus declivi-convexis, spiraliter filoso-liratis, liris aepē alternatim majoribus, interstitiis striatis; fulvā, purpureo ad suturam maculatā et interdum oblique strigatā; aperturā subcontractā, columellā excavato-appressā, interdum purpureo tinclā.*

**THE TREE LITTORINA.** Shell acuminately ovate, rather thin, whorls slantingly convex, spirally thread-ridged, ridges often alternately larger, interstices striated; fulvous, spotted at the suture and sometimes obliquely streaked with purple; aperture rather contracted, columella excavately appressed, sometimes stained with purple.

*Hab.* Singapore (on the branches of the Mangrove-tree); Cuming.

Of a peculiar opaque fulvous cast, spotted beneath the suture with purple, which is occasionally prolonged into oblique streaks.

### Species 28. (Fig. a, b, Mus. Cuming.)

**LITTORINA NEWCOMBI.** *Litt. testā pyramidal-ovatā, solidiusculā, anfractibus ad suturam rudē marginatis, declivi-convexis, infernē obtusē angulatis, undique dense irregulariter lineari-sulcatis; caerulecente, fulvo-rufā promiscuē tessellatā; aperturā parviusculā, columellā excavato-appressā, intense purpurā.*

**NEWCOMBE'S LITTORINA.** Shell pyramidally ovate, rather solid, whorls rudely margined at the suture, slantingly convex, obtusely angled at the lower part, densely irregularly linear-grooved throughout; bluish, promiscuously tessellated with fulvous-red; aperture rather small, columella excavately appressed, deep purple.

*Hab.* Sandwich Islands.

A very characteristic species, rather solid, inclined to be angular at the base, closely linearly incised throughout. The ground-colour is grey-blue, promiscuously tessellated throughout with fulvous-red.

### Species 29. (Fig. a, b, Mus. Cuming.)

**LITTORINA CARINIFERA.** *Litt. testā pyramidal-conicā, versus basin angulato-ventricosā, solidiusculā, anfractibus plano-declivibus, parum convexis, spiraliter carinato-costatis, costis distantibus, lirā obtusā inter costas decurrente; griseo-caeruleā, rufo-fusco punctatā et lentiginosā; columellā latē appressā, fulvā aut intense violaceā.*

**THE KEELED LITTORINA.** Shell pyramidally conical, angularly ventricose towards the base, rather solid, whorls flatly slanting, but little convex, spirally keel-ribbed, ribs distant, with an obtuse ridge running between the ribs; grey-blue, dotted and freckled with red-brown; columella broadly appressed, fulvous or deep violet.

*Phasianella carinifera*, Menke, Synopsis, 2nd edit. p. 51.

*Littorina perdir*, King.

*Littorina carinifera*, Philippi.

*Hab.* Java, Philippine Islands, China, Borneo.

This species has a wide range in the Eastern Seas, and varies materially in general form.









30



31a.



31b.



32a.



33b



34a.



34b.



35c.

# LITTORINA.

## PLATE VII.

### Species 30. (Mus. Cuming.)

**LITTORINA TENEBROSA.** *Litt. testā conico-ovatā, obtectā perforatā, anfractibus subangustis, rotundatis, nunc lævibus, nunc spiraliter latis; rufo-fusca, vel fulvā, fusco reticulatā; aperturā circulari, columellā dilatato-sinuatā.*

**THE DINGY LITTORINA.** Shell conically ovate, with a covered umbilicus, whorls rather narrow, rounded, sometimes smooth, sometimes spirally ridged; reddish-brown, or fulvous reticulated with brown; aperture circular, columella dilately sinuated.

*Turbo tenebrosus*, Montagu, Test. Brit. vol. ii. p. 303.

Supp. pl. 20. f. 4.

*Turbo restitus*, Say.

*Littorina tenebrosa*, Forbes.

*Hab.* Britain and United States.

Of this little species there are two very distinct varieties; one smooth and the other ridged. It is said to run into *L. rudis*; but it requires a considerable stretch of the imagination to trace this specific relationship.

### Species 31. (Fig. a, b, Mus. Cuming.)

**LITTORINA PALLIATA.** *Litt. testā subgloboso-ovatā, solidiusculā, imperforatā, spirā vix exsertā, anfractibus convexis, minutissimè granuloso-striatis, versus aperturam expansis; cæruleo-fusca, purpureo-fasciatā, aut fulvescente-olivacea; aperturā semicirculari, columellā latè callosā, interdum rufo-purpureā.*

**THE CLOTHED LITTORINA.** Shell somewhat globose, ovate, rather solid, imperforated, spire scarcely exserted, whorls convex, very minutely granularly striated, expanded towards the aperture; ash-brown, banded with purple, or fulvous-olive; aperture semicircular, columella broadly callous, sometimes reddish-purple.

*Turbo palliatus*, Say, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 240.

*Littorina palliata*, Gould.

*Hab.* United States.

Although included in the British fauna, the existence of this species upon our coast has not been satisfactorily determined. It is abundant on the shores of the United States.

### Species 32. (Fig. a, b, Mus. Cuming.)

**LITTORINA RUGOSA.** *Litt. testā ovato-globosā, solidā, imperforatā, spirā parvā, aculā, anfractibus tumido-convexis, longitudinaliter rudè corrugatis, spiraliter lineari-sulcatis; opaco-albā, carneo-fuscescente, obscurè pallidissimè tinctā; columellā latissimè excavatā, carneo-fuscescente maculatā.*

**THE WRINKLED LITTORINA.** Shell ovately globose, solid, imperforated, spire small, sharp, whorls tumidly convex, longitudinally rudely wrinkled, spirally linearly grooved; opaque-white, very faintly obscurely tinged with flesh-purple, columella very broadly excavated, spotted with flesh-purple.

*MENKE*, Specim. Moll. New Holland, p. 9.

*Hab.* Mouth of the Swan River, New Holland.

A very solid opaque-white globose shell, encircled with linear grooves, curiously rudely wrinkled longitudinally, and remarkably broadly excavated upon the columella.

### Species 33. (Fig. a, b, c, Mus. Cuming.)

**LITTORINA RUDIS.** *Litt. testā ovato-globosā, interdum obtectē umbilicatā, solidissimā, spirā brevī, aculā, anfractibus convexis, lævibus aut spiraliter lineari-sulcatis; albidā, carneo-fusco fasciatā, aut luteā, interdum nigro-lineatā; aperturā parvā, contractā, circulari, columellā callosā.*

**THE RUDE LITTORINA.** Shell ovately globose, sometimes with a covered umbilicus, very solid, spire short, sharp, whorls convex, smooth or spirally linearly grooved; whitish, banded with flesh-brown, or yellow, sometimes black in the linear grooves; aperture small, contracted, circular, columella callous.

*Turbo rudis*, Donovan, Brit. Shells, vol. i. p. 33. f. 3.

*Turbo littoreus*, Maton and Rackett.

• *Littorina rudis*, Johnston.

*Littorina zonaria*, Bean.

*Littorina nigrolineata*, Gray.

*Hab.* Britain and United States.

The specimens figured in the accompanying Plate represent the most characteristic varieties of this well-known species, the last, Fig. 33 c, being the *L. nigrolineata* of Gray.

LITTORINA.—PLATE VII.

Species 34. (Fig. *a*, *b*, Mus. Cuming.)

LITTORINA LITTORALIS. *Litt. testâ semiglobosâ, solidissimâ, spirâ plano-depressâ, anfractibus obliquè convexis, lævibus aut obscurissimè striatis; luteâ, interdum latè fusco-fasciatâ; aperturâ circulari, valdè contractâ, columellâ latè excavatâ.*

THE LITTORAL LITTORINA. Shell semiglobose, very solid, spire flatly depressed, whorls obliquely convex, smooth, or very obscurely striated; yellow, sometimes broadly brown-banded; aperture circular, very much contracted, columella broadly excavated.

*Nerita littoralis*, Linnæus, Syst. Nat. p. 1253.

*Turbo retusus* and *obtusatus*, Lamarck.

*Turbo ustulatus*, De Blainville.

*Littorina obtusata*, Menke.

*Hab.* Britain and North European shores.

Well distinguished by its oblique obtuse growth and depressed spire, varying in colour from yellow, more or less banded, to freckled brown.

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35.



36 a.



36 b.



37 a.



38 b.



37 b



38 a.



39 b.



40.

# LITTORINA.

## PLATE VIII.

### Species 35. (Mus. Cuming.)

**LITTORINA TENUIS.** *Litt. testā ovato-oblongā, acutā, imperforatā, anfractibus declivi-converxis, concentricè tenuè lineari-sulcatis; carneo-albidā, opaco-albo obscure lentiginosā; aperturā parviusculā, labro columellari tenuè reflexo.*

**THE THIN LITTORINA.** Shell ovately oblong, sharp, imperforated, whorls slantingly convex, concentrically finely linear-grooved; flesh-white, obscurely freckled with opake-white; aperture rather small, columellar lip thinly reflected.

PHILIPPI, Abbild. und Besch. Conch. p. 18. pl. 6. f. 8.

*Hab.* Island of Ticao, Philippine Islands.

A light-drab freckled shell, having more the appearance of a *Bulimus* than of a *Littorina*.

### Species 36. (Fig. a, b, Mus. Cuming.)

**LITTORINA CONICA.** *Litt. testā subpyramidal-conicā, tenuiculā, imperforatā, anfractibus plano-declivibus, parum convexis, spiraliter lineari-sulcatis, infernè angulatis, ad angulum tenuicarinatis; pellucido-griseā, fuscescente villatā et lentiginosā, interdum stramineā; aperturā parviusculā, columellā appressā, sulcatā, labro tenuè reflexo, violaceo.*

**THE CONICAL LITTORINA.** Shell somewhat pyramidally conical, rather thin, imperforated, whorls flatly slanting, but little convex, spirally linear-grooved, angled round the lower part, finely keeled at the angle; transparent-grey, filleted and freckled with light-brown, sometimes straw-colour; aperture rather small, columella appressed, grooved, lip thinly reflected, violet.

PHILIPPI, Pro. Zool. Soc. 1845, p. 141.

*Hab.* Japan.

An extremely graceful and characteristic species, of a pyramidally conical form, semitransparent, either yellow or freckled with a neat filleted pattern, the columellar lip being of a violet hue.

### Species 37. (Fig. a, b, Mus. Cuming.)

**LITTORINA AFRICANA.** *Litt. testā ovato-conicā, subcentricā, solidiusculā, imperforatā, anfractibus convexis,*

*lævibus, spiraliter lineari-sulcatis, infernè angulatis, tenuicarinatis; cæruleo-albā; columellā latè excavatā, cum aperturæ fauce intensè purpureo-castnèa.*

**THE AFRICAN LITTORINA.** Shell ovately conical, somewhat ventricose, rather solid, imperforated, whorls convex, smooth, spirally linear-grooved, angled and finely keeled round the lower part; bluish-white; columella broadly excavated, with the interior of the aperture deep purple-chestnut.

PHILIPPI, Abbild. und Besch. Conch. p. 31. pl. 4. f. 10.

*Hab.* Algoa Bay; Krauss.

A solid, opake, blue-white shell, faintly linear-grooved, neatly angled round the lower part, having the columella and interior of the aperture richly stained with dark purple-chestnut.

### Species 38. (Fig. a, b, Mus. Cuming.)

**LITTORINA PLANAXIS.** *Litt. testā subgloboso-conicā, ventricosā, imperforatā, anfractibus lævibus, supernè subimpressis, deinde convexis; olivaceo-fuscā, albo floccatā; columellā latissimè excavatā.*

**THE PLANAXIS LITTORINA.** Shell somewhat globosely conical, ventricose, imperforated, whorls smooth, slightly impressed round the upper part, then convex; olive-brown, flaked with white; columella very broadly excavated.

NUTTALL, Philippi, Abbild. und Besch. Conch. p. 33. pl. 4. f. 16.

*Hab.* Upper California.

Of rather globose form, remarkably broadly excavated at the columella against the body-whorl. Rusty olive-brown in colour, flaked with white.

### Species 39. (Fig. a, b, Mus. Cuming.)

**LITTORINA SULCULOSA.** *Litt. testā subacutè conicā, tenuiculā, solidā, anfractibus plano-declivibus, regulariter latè sulcatis et obtusè costatis, infernè angulatis; spadiceā, costis interdum livido-purpurascensibus, nitentibus; aperturā subcontractā.*

**THE GROOVED LITTORINA.** Shell rather sharply conical, rather thin, solid, whorls flatly slanting, regularly broadly grooved and obtusely ribbed, angled at the



# LITTORINA.—PLATE VIII.

lower part; fawn-colour, ribs sometimes stained with livid-purple, shining; aperture rather contracted.

PHILIPPI, Pro. Zool. Soc. 1845, p. 142.

*Hab.* North coast of New Holland.

Characterized very distinctly by its broad, shining, flattened ribs, which are sometimes of a purplish-livid hue, and intervening grooves.

Species 40. (Mus. Cuming.)

LITTORINA STRIATA. *Lill. testā abbreviato-conicā, centricosā, imperforatā, acutā, anfractibus declivi-convexis,*

*obovis, spiraliter sulcatis et liratis; sordidē cinereo-nigricante; columellā latissimē excavatā, fusco tinctā.*

THE STRIATED LITTORINA. Shell shortly conical, ventricose, imperforated, sharp, whorls slantingly convex, stout, spirally grooved and ridged; ash-black; columella very broadly excavated, stained with brown.

KING, Zool. Journ. vol. v. p. 345.

*Littorina Canariensis*, D'Orbigny.

*Littorina arenica*, Nuttall.

*Hab.* West Africa, Azores, and Canary Islands.

A stout, strongly linear-grooved, adust shell, with the columella against the body-whorl very broadly excavated.





47.



48b



48a



49a



50b.



50b.



51b.



# LITTORINA.

## PLATE X.

### Species 47. (Mus. Cuming.)

**LITTORINA FRASERI.** *Litt. testā acuminato-ovalā, anfractibus declivi-converxis, subventricosis, validè crebrilatis; livido-purpurascēte, nitēte, undique rufo-punctatā; aperturā semicirculari, columellā latè excavatā.*

**FRASER'S LITTORINA.** Shell acuminate ovate, whorls slantingly convex, subventricose, strongly closely ridged; livid-purple, shining, everywhere red-dotted; aperture semicircular, columella broadly excavated.

*Hab.* Lagos, West Africa; Fraser.

A thin but solid shell, deeply closely grooved, the intermediate ridges being tessellated with dark purple-red.

### Species 48. (Fig. a, b, Mus. Cuming.)

**LITTORINA TESSELLATA.** *Litt. testā acuminato-ovalā, anfractibus ad suturam impressis, deinde ventricosis, infernè obtusè angulatis, undique tenuè lineari-sulcatis; virescente-albā, punctis purpureo-rufo undique densè tessellatā; columellā latè excavatā.*

**THE TESSELLATED LITTORINA.** Shell acuminate ovate, whorls impressed at the suture, then ventricose, obtusely angled at the lower part, everywhere finely linearly grooved; greenish-white, densely tessellated throughout with dark purple-red dots; columella broadly excavated.

*PHILIPPI, Abbild. und Besch. Conch. pl. 5. f. 26.*

*Littorina undulata*, D'Orbigny.

*Hab.* West Indies.

Neatly tessellated throughout with dark purple-red, the spots mostly forming oblique waved streaks.

### Species 49. (Mus. Cuming.)

**LITTORINA SITCHANA.** *Litt. testā semiglobosā, inflatā, spirā parā, obtusā, anfractibus convexis, nunc levibus, nunc spirālīter liratis; nigrā, virescente medio et ad suturam fasciatā; aperturā circulari, labro excavato-dilatato.*

**THE SITKA LITTORINA.** Shell semiglobose, inflated, spire small, obtuse, whorls convex, sometimes smooth, sometimes spirally ridged; black, banded in the middle and at the suture with greenish-white; aperture circular, lip excavately dilated.

*PHILIPPI, Pro. Zool. Soc. 1845, p. 140.*

*Hab.* Sitka.

A very characteristic semiglobose inflated shell, of solid growth, more or less strongly keeled.

### Species 50. (Fig. a, b, Mus. Cuming.)

**LITTORINA CABINATA.** *Litt. testā pyramidalī-conoidē,*

*anfractibus plano-declivibus, spirālīter linearī-sulcatis, infernè carinatis, infra subconcavis; albidā, intensè plumbeo-ceruleo fasciatā, purpureo-rufo obliquè undato-striatā; aperturā parā, columellā latè excavatā.*

**THE KEELD LITTORINA.** Shell pyramidally conoid, whorls flatly slanting, spirally linearly grooved, keeled at the lower part, slightly concave beneath; whitish, banded with deep leaden blue, obliquely wave-streaked with purple-red; aperture small, columella broadly excavated.

*D'ORBIGNY, Moll. de Cuba, p. 209. pl. 15. f. 1-4.*

*Hab.* Cuba.

A solid shell, of very characteristic form and pattern of colouring.

### Species 51. (Fig. a, b, Mus. Cuming.)

**LITTORINA BREVICULA.** *Litt. testā globoso-turbinatā, solidiusculā, spirā brevī, acutā, anfractibus declivi-angulatis, validè spirālīter carinatis, carinis distantibus, intersitiis striatis; albidā, nigro tinctā, rufo et viridi maculatā; aperturā circulari, columellā latè excavatā et dilatatā.*

**THE SHORT LITTORINA.** Shell globosely turbinated, rather solid, spire short, sharp, whorls slantingly angled, strongly spirally keeled, keels distant, interspaces striated; whitish, stained with black, blotched with red and green; aperture circular, columella broadly excavated and dilated.

*Turbo breviculus*, Philippi, Zeitschrift für Malac. 1844, p. 166.

*Hab.* North coast of China.

Of broad Turbo-like form, encircled with three strong keels, and prettily variegated with colour upon a dark ground.

### Species 52. (Mus. Cuming.)

**LITTORINA GREENLANDICA.** *Litt. testā ovato-ventricosā, tenuiculā, anfractibus convexis, spirālīter obsolete liratis; livido-castaneā; columellā dilatatā.*

**THE GREENLAND LITTORINA.** Shell ovately ventricose, rather thin, whorls convex, spirally obsolete ridged; livid-chestnut; columella broadly dilated.

*MENKE, Syn. Moll. 1830, p. 45.*

*Littorina sulcata*, Menke.

*Littorina castanea*, Deshayes.

*Nerita litorea*, Fabricius.

*Hab.* Greenland.

Of rather light structure, sometimes banded, with the columellar lip conspicuously excavately dilated.







54a



54b



55b



56a



56b



# LITTORINA.

## PLATE XI.

### Species 53. (Mus. Cuming.)

**LITTORINA CINCTA.** *Litt. testâ acuminato-ovalâ, anfractibus declivi-convexis, spiraliter lineari-sulcatis, infernè obtusè carinatis, infra liris; purpurascens-fuscâ, ferrugineo finctâ, inter liras basales albâ; aperturâ parvâ, columellâ excavatâ, callosâ, livido-purpureâ.*

**THE ENCIRCLED LITTORINA.** Shell acuminate ovate, whorls slantingly convex, spirally linearly grooved, obtusely keeled at the lower part, ridged beneath; purplish-brown, rust-tinted, white between the basal ridges; aperture small, columella excavated, callous, livid-purple.

QUOY and GAIMARD, Voy. de l'Astrolabe, vol. ii. p. 481. pl. 33. f. 20-21.

*Hab.* New Zealand.

A dark ash-brown shell, simply linearly grooved, the grooves being wider at the base beneath the angle.

### Species 54. (Fig. a, b, Mus. Cuming.)

**LITTORINA PINTADO.** *Litt. testâ acuminato-ovalâ, spirâ peracutâ, anfractibus convexus, densè spiraliter lineari-sulcatis; cærulescente-albâ, undique minutè rufo-punctatâ; aperturâ parvisculâ, fauce purpureo-violaceâ, columellâ latissimè excavatâ.*

**THE PINTADO LITTORINA.** Shell acuminate ovate, spire very sharp, whorls convex, closely spirally linearly grooved; bluish-white, everywhere minutely red-dotted; aperture rather small, interior purple-violet, columella very broadly excavated.

*Turbo Pintado*, Wood, Index Test. Supp. pl. 6. f. 34.

*Littorina Pintado*, Philippi.

*Hab.* Sandwich Islands.

Of a very characteristic aspect, bluish-grey, covered with minute purple-red dots.

### Species 55. (Fig. a, b, Mus. Cuming.)

**LITTORINA NEBULOSA.** *Litt. testâ acuminato-ovalâ, tenuiculâ, ventricosâ, anfractibus declivi-convexis, densè impresso-atriatis; albâ, rufescente-fusco obliquè flammâtâ; columellâ tenuè reflexâ.*

**THE CLOUDED LITTORINA.** Shell acuminate ovate, rather thin, ventricose, whorls slantingly convex, densely impressly striated; whitish, obliquely flamed with reddish-brown; columella thinly reflected.

*Phasianella nebulosa*, Lamarck, Anim. sans vert. vol. ix. p. 244.

*Hab.* Honduras.

Allied to *L. undulata*, but of less solid growth, more

ventricose, and wanting the characteristic violet columella of that species.

### Species 56. (Fig. a, b, Mus. Cuming.)

**LITTORINA IRRODATA.** *Litt. testâ acuminato-ovalâ, solidiusculâ, anfractibus superne subimpressis, deinde rotundatis, undique validdè spiraliter liris, liris confertis, interstitiis profundè excavatis; livido-plumbeâ aut nigricante, liris cæruleo-albidis, rufo punctatis; aperturâ subcontractâ, fauce nigro-purpureâ, columellâ excavato-dilatâ.*

**THE BEDEWED LITTORINA.** Shell acuminate ovate, rather solid, whorls slightly impressed round the upper part, then rounded, everywhere strongly spirally ridged, ridges close-set, interstices deeply excavated; livid lead-colour or blackish, ridges bluish-white, dotted with red; aperture rather contracted, interior blackish-purple, columella excavately dilated.

*Turbo irroratus*, Say, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 239.

*Littorina irrorata*, Gray.

*Phasianella sulcata*, Lamarck.

*Hab.* Sitka.

Strongly ridged, of a grey colour, the ridges being roughened with red granules.

### Species 57. (Fig. a, b, Mus. Cuming.)

**LITTORINA ZICZAC.** *Litt. testâ acuminato-ovalâ, anfractibus declivi-convexis, tenuissimè lineari-sulcatis, infernè obsolete angulatis; lutescente-albâ, pallidè cinereo-cærulescente, lineis rufo undatis obliquè strigatâ; aperturâ subcontractâ, fauce purpureo-fasciatâ, columellâ subcallosâ.*

**THE ZICZAG LITTORINA.** Shell acuminate ovate, whorls slantingly convex, very finely linearly grooved, absolutely angled at the lower part; yellowish-white, banded with pale ash-blue, obliquely streaked with waved red lines; aperture rather contracted, interior purple-banded, columella slightly callous.

*Trochus ziczac*, Chemnitz, Conch. Cab. vol. v. p. 69. pl. 166. f. 1599.

*Hab.* Monte Christi, West Columbia. Kangaroo Island, South Australia.

Notwithstanding the discrepancy in the above-quoted localities, the specimens bearing them, on good authority, are certainly the same species, agreeing precisely with the figure cited from Chemnitz.

### Fig. 58. (Mus. Cuming.)

The shell here represented, *L. tenebrata* of Nuttall, proves, on examination, to be merely a worn *L. Pintado*.









59.



60a



60b.



62b.



61b.



63b.



64.

# LITTORINA.

## PLATE XII.

Species 59. (Mus. Cuming.)

**LITTORINA ABERRANS.** *Litt. testā acuminato-turritā, tenui, gracili, anfractibus rotundatis, spiraliter subtiliter liratis et striatis, striis longitudinalibus irregulariter decussatim striatis; carneo-albicante, liris opacis; aperturā parvā, circulari, labro et columellā tenuē reflexis, roseo-purpureis.*

**THE ABERRANT LITTORINA.** Shell acuminate turreted, thin, slender, whorls rounded, spirally finely ridged and striated, irregularly plicately decussated with longitudinal striæ; flesh-white, ridges opaque; aperture small, circular, lip and columella thinly reflected, rose-purple.

PHILIPPI, Pro. Zool. Soc. 1845, p. 142.

*Hab.* Panama.

A slender acuminate shell, of light growth, having very much the appearance of a *Bulinus*.

Fig. 60. (Mus. Cuming.)

A variety of *L. Fraseri*, of more attenuated form, from Fernando Po.

Species 61. (Fig. a, b, Mus. Cuming.)

**LITTORINA ZEBRA.** *Litt. testā acuminato-ovalā, spirā aculā, crassiusculā, anfractibus convexis, lævibus; nigricante-purpureā, flammis albis latius undato-striatā; columellā latē excavatā, aperturæ fauce nigricante-purpureā.*

**THE ZEBRA LITTORINA.** Shell acuminate ovate, spire sharp, rather thick, whorls convex, smooth; blackish-chestnut, streaked with broad waved white flames; columella broadly excavated, interior of aperture blackish-purple.

*Turbo zebra*, Wood, Index Test. Supp. pl. 6. f. 33.

*Littorina zebra*, Philippi.

*Phasianella Peruviana*, Lamarck.

*Hab.* Peru, Chili.

A solid, conspicuously white-flamed shell, stained with deep-purple in the aperture.

Species 62. (Fig. a, b, Mus. Cuming.)

**LITTORINA GLANS.** *Litt. testā ovato-conoidē, crassā,*

*apice aculā, anfractibus declivi-convexis, rudē plicato-corrugatis et tuberculato-granatis; atrā, ad suturam rufescente; aperturā parvā, columellā callosā.*

**THE ACORN LITTORINA.** Shell ovately conoid, thick, sharp at the apex, whorls slantingly convex, rudely plicately wrinkled, and tubercularly grained; black, reddish at the suture; aperture small, columella callous.

*Hab.* — ?

An obtusely conoid solid shell, cinder-black, rust-tinged at the suture, largely grained throughout.

Species 63. (Fig. a, b, Mus. Cuming.)

**LITTORINA SIMPLEX.** *Litt. testā ovato-turbinatā, tenui-culā, anfractibus rotundatis, obsolete spiraliter liratis; sordidē fusciscente-aurantiā; aperturā subcirculari, columellā excavato-expanded.*

**THE SIMPLE LITTORINA.** Shell ovately turbinated, rather thin, whorls rounded, obsoletely spirally ridged; dirty brownish-orange; aperture nearly circular, columella excavately expanded.

*Hab.* St. Vincent, Cape de Verdes.

Of simple form, the representative ap of our common *L. vulgaris*.

Species 64. (Mus. Cuming.)

**LITTORINA AMBIGUA.** *Litt. testā acuminato-ovalā, crassiusculā, anfractibus superne declivi-impressis, deinde convexis, spiraliter liratis, liris angustis, interdum subobsoletis; fuscescente, purpureo-castaneo tessellatā aut promiscuē maculatā; columellā latē excavatā, callosā.*

**THE DOUBTFUL LITTORINA.** Shell acuminate ovate, rather thick, whorls slantingly impressed round the upper part, then convex, spirally ridged, ridges narrow, sometimes nearly obsolete; brownish, tessellated or promiscuously blotched with purple-chestnut; columella broadly excavated, callous.

NUTTALL, MSS., Mus. Cuming.

*Hab.* Sandwich Islands.

A shell of rather solid growth, tessellated in a somewhat irregular blotched manner.







65



67 d.



68 b.



# LITTORINA.

## PLATE XIII.

### Species 65. (Mus. Cuming.)

LITTORINA LUCTUOSA. *Litt. testā acuminato-ovatā, imperforatā, anfractibus declivi-converxis, longitudinaliter plicato-striatis, infernè spiraliter sulcatis; livido-fuscā; aperturā parvisculā, columellā purpurascēte.*

THE SAD LITTORINA. Shell acuminate ovate, imperforated, whorls slantingly convex, longitudinally plicately striated, spirally grooved towards the lower part; livid-brown; aperture rather small, columella purplish.

*Hab.* New Zealand.

A rather light acuminate species, of a bluish livid-brown colour, chestnut in the aperture.

### Species 66. (Fig. a, b, Mus. Cuming.)

LITTORINA PUNCTATA. *Litt. testā ovato-ventricosā, spirā breviusculā, acutā, anfractibus converxis, regulariter lineari-sulcatis; olivaceo-fuscā, punctis albis quadratis unigue tessellatā; aperturā subpatulā, columellā latè appressā.*

THE DOTTED LITTORINA. Shell ovately ventricose, spire rather short, sharp, whorls convex, regularly linearly grooved; olive-brown, tessellated throughout with square white dots; aperture rather open, columella broadly appressed.

*Turbo punctata*, Gmelin, Syst. Nat. p. 3597.

*Le. Marnat*, Adanson.

*Hab.* Senegal.

Mostly of ventricose growth, thickly tessellated with small square white dots upon a dark-olive ground.

### Species 67. (Fig. a, b, c, d, Mus. Cuming.)

LITTORINA UNDULATA. *Litt. testā ovato-conoidē, imperforatā, solidiusculā, anfractibus superne subconcavo-impressis, deinde converxis, nunc levibus, nunc sulcatis et liris; lutescente-albā, rufo-fusco æpè fasciatā aut flammātā; aperturā subcontractā, columellā callosa-appressā, intensè violacēā.*

THE WAVED LITTORINA. Shell ovately conoid, imperforated, rather solid, whorls slightly concavely im-

pressed round the upper part, then convex, sometimes smooth, sometimes grooved and ridged; yellowish white, frequently banded or flamed with red-brown; aperture rather contracted, columella callously appressed, deep violet.

GRAY, Zool. Beechey's Voyage, p. 140.

*Hab.* Society and Philippine Islands.

This is the most variable of all *Littorinae*. Some specimens are smooth and marbled with chestnut-brown, others pale and spirally ridge-striated; but all are characterized by a deep-violet enamelled columella.

### Species 68. (Fig. a, b, Mus. Cuming.)

LITTORINA GRANULARIS. *Litt. testā ovato-ventricosā, spirā parvā, acutā, anfractibus converxis, densè irregulariter granoso-liratis; fulvā, ceruleo tinctā; columellā latè excavatā et dilatatā, carneo-fuscescente.*

THE GRAINED LITTORINA. Shell ovately ventricose, spire small, sharp, whorls convex, closely irregularly granosely ridged; fulvous, tinged with blue; columella broadly excavated and dilated, flesh-brown.

GRAY, Zool. Beechey's Voyage, p. 140.

*Hab.* — ?

The grained ridges are on the middle and upper portion of the whorls; on the lower part the ridges are smooth, and more numerous and close-set.

### Species 69. (Mus. Cuming.)

LITTORINA ARCTICA. *Litt. testā subgloboā, spirā breviusculā, anfractibus rotundatis, plus minus erosis; sordidè fuscā; aperturā subcirculari, columellā subcallosā.*

THE ARCTIC LITTORINA. Shell subglobose, spire rather short, obtuse, whorls rounded, more or less eroded; dirty-brown; aperture nearly circular, columella somewhat callous.

MÖLLER, Fauna Grönlandica, p. 9.

*Hab.* Kamtschatka, Nova Zembla.

A globose, rather light inflated species, of a dingy hue; generally more or less eroded.









70.



73.



76.



(Moderately enlarged.)

# LITTORINA.

## PLATE XIV.

### Species 70. (Mus. Cuming.)

*LITTORINA DEBILIS.* *Litt. testā subpyramidalī-conoideā, solidiusculā, anfractibus plano-convexis, infernē abruptē angulatis, lævigatā, nitentē, tenuissimē lineari-sulcatā; cærulescente-albā, lineis carneis undulatis pallidissimis longitudinaliter pictā; aperturā parviusculā, columellā callosā, violaceo-fuscescente.*

THE FAINT LITTORINA. Shell somewhat pyramidally conoid, rather solid, whorls flatly convex, abruptly angled at the lower part; smooth, shining, very finely linearly grooved; bluish-white, painted longitudinally with faint zigzag flesh-lines; aperture rather small, columella callous, violet-brown.

PHILIPPI, *Pro. Zool. Soc.* 1845, p. 140.

*Hab.* ———?

A solid subpyramidal shell, of a smooth, bluish aspect, marked with faint zigzag flesh-lines.

the upper part, slanting, then stout, solid; whitish, banded with a livid-red; aperture small, columella somewhat callous, red.

*Turbo Neritoides*, Linneus, *Syst. Nat.* p. 1232.

*Helix petraea*, Montagu.

*Turbo petraeus*, Maton and Rackett.

*Turbo cærulescens*, Lamarck.

*Littorina Basteroti*, Paymoudeau.

*Rissoa elegans*, Risso.

*Paludina glabrata*, Ziegler.

*Littorina cærulea*, Costa.

*Littorina petraea*, Gray.

*Littorina Neritoides*, Philippi.

*Hab.* Mediterranean and other seas of Europe.

To Dr. Philippi is due the merit of having recognized in this species the true Linnæan *Turbo Neritoides*.

### Fig. 73. (Mus. Cuming.)

This shell, *L. Canariensis* of D'Orbigny, is identical with *L. striata*, King.

### Species 74. (Mus. Cuming.)

*LITTORINA BALTEATA.* *Litt. testā globoso-turbinatā, spirā brevi, acutā, anfractibus supernē declivibus, deinde ventricosis, spiraliter fortiter carinatis, carinis subtilibus obsolete granosis; livido-plumbeā; aperturā parvā, columellā latē excavatā et dilatatā.*

THE BELTED LITTORINA. Shell globosely turbinated, spire short, sharp, whorls slanting round the upper part, then ventricose, spirally strongly keeled, keels rather distant, obsolete grained; livid lead-colour; aperture small, columella broadly excavated and dilated.

*Hab.* China; Fortune.

Allied in form to *L. brevicula*, but of thinner substance, with the ribs sharper and more distant.

### Species 72. (Mus. Cuming.)

*LITTORINA NERITOIDES.* *Litt. testā ovato-conoideā, spirā breviusculā, anfractibus lævibus, supernē subimpressis, declivibus, deinde obesis, solidis; albidā, livido-rufescente fasciatā; aperturā parvā, columellā subcallosā, rufā.*

THE NERITOID LITTORINA. Shell ovately conoid, spire rather short, whorls smooth, slightly impressed round

*LITTORINA NOVÆ-ZELANDIÆ.* *Litt. testā subgloboso-turbinatā, spirā breviusculā, acutissimā, anfractibus rotundatis, spiraliter irregulariter lineari-sulcatis; opaco-albā, obscure pallidissimē rufo-flammulatā; aperturā subcirculari, fance castaneo-fuscā, columellā latissimē excavatā, livido-castaneā.*

THE NEW ZEALAND LITTORINA. Shell somewhat globosely turbinated, spire rather short, very sharp, whorls rounded, spirally irregularly linearly grooved; opaque-white, obscurely very faintly red-flamed; aperture nearly rounded, chestnut-brown in the interior, columella very broadly excavated, livid-chestnut.

*Hab.* New Zealand.

Curiously resembling *L. Africana* in colour and marking, but of lighter and rounder form.

### Species 75. (Fig. a, b, Mus. Cuming.)

*LITTORINA KNYSNAENSIS.* *Litt. testā subgloboso-turbinatā, tenuiusculā, ventricosā, anfractibus declivi-convexis, densē spiraliter elevato-striatis; albā, ferrugineo-fusco*

# LITTORINA.—PLATE XIV.

*lentiginosâ, infernè livido-nigricante tinctâ; aperturæ fauce nigricante-castaneâ, columellâ callosâ, rufâ, sub-excavatâ.*

THE KNYSNA LITTORINA. Shell somewhat globosely turbinated, rather thin, ventricose, whorls slantingly convex, densely spirally elevately striated; whitish, freckled with rust-brown, tinged with livid-black towards the lower part; interior of the aperture blackish-chestnut, columella callous, red, slightly excavated.

KRAUSS, Philippi, Abbild. und Besch. Conch. pl. 4. f. 4.

Hab. Mouth of the Knysna, Cape of Good Hope.

There is a peculiarity in the freckled marking of this species which renders it easily recognizable.

Species 76. (Mus. Cuming.)

LITTORINA GUTTATA. *Litt. testâ subpyramidali-conoideâ, solidâ, anfractibus plano-convexis, infernè abruptè angulatis, lævigatis; olivaceo-griseâ, punctis albis lentiginosâ et tessellatâ; aperturâ parviusculâ, columellâ callosâ, rufescente.*

THE SPOTTED LITTORINA. Shell somewhat pyramidally conoid, solid, whorls flatly convex, abruptly angled at the lower part, smooth; olive-grey, freckled and tessellated with white dots; aperture rather small, columella callous, reddish.

PHILIPPI, Abbild. und Besch. Conch. pl. 4. f. 7.

*Phasianella punctata*, Pfeiffer.

Hab. St. Vincent, Cape de Verds.

Of rather solid acuminate growth, freckled throughout with whitish dots upon an olive-grey ground.





7511



7512



7513



7514



(Considerably enlarged.)

# LITTORINA.

## PLATE XV.

### Species 77. (Mus. Cuming.)

**LITTORINA MESPIUM.** *Litt. testā obtusē conoidē, sub-umbilicatā, solidiusculā, anfractibus convexis, laevibus; fuscescente-rufā; aperturā subcirculari, columellā callosā.*

**THE MEDLAR LITTORINA.** Shell obtusely conoid, slightly umbilicated, rather solid, whorls convex, smooth; brownish-red; aperture nearly circular, columella callous.

*Helix mespilum*, Mühlfeldt, Verh. Berl. Ges. Nat. vol. i. p. 219. pl. 8. f. 8.

*Littorina fusca*, Pfeiffer.

*Littorina mespilum*, Philippi.

*Littorina Naticoides*, D'Orbigny.

*Hab.* Jamaica.

A small solid shell, of a characteristic brownish-red or drab colour.

### Species 78. (Fig. a, b, Mus. Cuming.)

**LITTORINA THERSITES.** *Litt. testā obtusē ovatā, solidiusculā, spirā brevi, aculā, anfractibus tenuē lineari-sulcatis, plano-convexis, infernē subangulatis; albidā, virescente-ceruleo fuscātā; columellā appresso-excavatā; aperturā fauce purpureo-fuscā.*

**THE THERSITES LITTORINA.** Shell obtusely ovate, rather solid, spire short, sharp, whorls finely linearly grooved, flatly convex, slightly angled at the lower part; whitish, banded with greenish-blue; columella appressly excavated; interior of aperture purple-brown.

*Hab.* Valparaiso.

A small, solid, humped shell, conspicuously linearly grooved, of a pale ash-colour, banded with grey-blue.

### Species 79. (Mus. Cuming.)

**LITTORINA GRANO-COSTATA.** *Litt. testā subgloboā, spirā brevi, aculā, anfractibus convexis, subventricosis, spirāliter lineari-sulcatis, longitudinaliter granoso-costatis; cærulescente-albā; columellā appresso-excavatā; aperturā fauce purpureo-fuscā.*

**THE GRAIN-RIBBED LITTORINA.** Shell sub-globose, spire short, sharp, whorls convex, sub-ventricose, spirally linearly grooved, longitudinally granosely ribbed; bluish-white; columella appressly excavated; interior of the aperture purple-brown.

*Hab.* Brisbane Water, Australia; Strange.

A pretty little opaque blue-white shell, latticed with

grained ribs, which, in specimens of more mature growth, become somewhat obsolete.

### Species 80. (Fig. 80 a, b, and 81, Mus. Cuming.)

**LITTORINA PICTA.** *Litt. testā ovato-turbinatā, anfractibus convexis vel obsoletē lineari-sulcatis, interdum granulatis; olivaceo-nigricante, maculis grandibus amplis irregulariter marmoratā; columellā excavatā, aperturā fauce intensē purpureā.*

**THE PAINTED LITTORINA.** Shell ovately turbinated, whorls convex or obsoletely linearly grooved, sometimes granulated; olive-black, irregularly marbled with large white spots; columella excavated, interior of the aperture deep-purple.

*Philippi*, Abbild. und Besch. Conch. pl. 3. f. 26.

*Hab.* Sandwich Islands.

The specimen of *L. picta* here represented is Dr. Philippi's var. *marmorata*.

### Species 82. (Fig. a, b, Mus. Cuming.)

**LITTORINA FEEJENSIS.** *Litt. testā ovato-conoidē, tenuiusculā, spirā brevi, aculā, anfractibus ventricosis, planulatis, infernē angulatis, undique irregulariter granosoliratis; nigricante, granulis pallidis; columellā excavatā, aperturā fauce purpureo-fuscā.*

**THE FEEJEE LITTORINA.** Shell ovately conoid, rather thin, spire short, sharp, whorls ventricose, rather flat, angled at the lower part, everywhere irregularly granosely ridged; blackish, granules pale; columella excavated, interior of the aperture purple-brown.

*Hab.* Feejee Islands; Macgillivray.

A dull, angularly convoluted shell, encircled with small chains of whitish grains.

### Species 83. (Mus. Cuming.)

**LITTORINA PICEA.** *Litt. testā obtusē conoidē, anfractibus plano-convexis, obliquē striatis et interdum granulatis, infernē angulatis; intensē piceo-nigrā; aperturā parvā, columellā excavatā, purpureā.*

**THE PITCHY LITTORINA.** Shell obtusely conoid, whorls flatly convex, obliquely striated, sometimes granulated, angled at the lower part; dark pitch-black; aperture small, columella excavated, purplish.

*Hab.* — ?

A solid, pitch-dark, berry-like shell, of a distinct typical form from any other of the genus.









Fig. 1



Fig. 2



Fig. 3



(Considerably enlarged.)

# LITTORINA.

## PLATE XVI.

### Species 84. (Mus. Cuming.)

LITTORINA PALUDINELLA. *Litt. testā subglobosā, tenui, cornēā, spirā parvā, acutā, anfractibus ad suturam subimpressis, rotundatis, laevibus; olivaceo-castaneā; aperturā subcirculari, columellā excavatā, callosā.*

THE LITTLE PALUDINA LITTORINA. Shell subglobose, thin, horny, spire small, sharp, whorls rather impressed at the suture, rounded, smooth; olive-chestnut; aperture nearly circular, columella excavated, callous.

*Hab.* Tasmania.

A minute, dark-brown, horny-like shell, with the whorls narrow and more than usually rounded.

### Species 85. (Fig. a, b, Mus. Cuming.)

LITTORINA ADAMSI. *Litt. testā ovato-turbinatā, subturritā, anfractibus lineari-sulcatis, supernē et infernē angulatis; lutescente-albā, punctis fuscis vittatā, punctis ad angulum inferum majoribus; aperturā subcirculari.*

ADAMS'S LITTORINA. Shell ovately turbinated, somewhat turreted, whorls linearly grooved, angled above and below; yellowish-white, filleted with brown dots, dots larger at the lower angle; aperture nearly circular.

*Littorina pulchella*, C. B. Adams, MS., Mus. Cuming.

*Hab.* Jamaica.

A minute yellowish shell, of a peculiar turreted form, filleted with brown dots.

### Species 86. (Mus. Cuming.)

LITTORINA MINIMA. *Litt. testā ovatā, Naticæformi, subumbilicatā, spirā parvā, acutā, anfractibus convexis, ultimo subexpanso; cærulescente-albā, punctis purpureo-fuscis regulariter serialim aspersā; columellā plano-callosā, aperturā fauce violaceo-purpureā.*

THE VERY SMALL LITTORINA. Shell ovate, Naticæ-shaped, slightly umbilicated, spire small, sharp, whorls convex, the last somewhat expanded; bluish-white, sprinkled with regular rows of purple-brown dots; columella flatly callous, interior of the aperture violet-purple.

*Turbo minimus*, Wood, Index Test. Supp. pl. 6. f. 29.

*Hab.* — ?

Distinguished by a very characteristic clear pattern of small, distinct red dots upon a blue-white ground.

### Species 87. (Mus. Cuming.)

LITTORINA RUFA. *Litt. testā ovato-turbinatā, solidiusculā, minutā umbilicatā, anfractibus declivi-convezis, laevibus, politis; rufo-fuscescente; aperturā parvā, fauce callosā.*

THE RED LITTORINA. Shell ovately turbinated, rather solid, minutely umbilicated, whorls slantingly convex, smooth, polished; red-brown; aperture small, interior callous.

RECLUZ, MS., Mus. Cuming.

*Hab.* — ?

A minute, solid, bright red-brown shell, with a bright polished surface.

### Species 88. (Mus. Cuming.)

LITTORINA ARAUCANA. *Litt. testā oblongo-ovatā, spirā elevatā, anfractibus declivi-convezis, lævigatis; purpureo-castaneā; aperturā ovalā, parvisculā, columellā subexcavatā, ad extremitatem dilatatā, aperturā fauce nigricante-purpureā.*

THE SLENDER LITTORINA. Shell oblong-ovate, spire raised, whorls slantingly convex, smooth; purple-chestnut; aperture ovate, rather small, columella slightly excavated, dilated at the extremity, interior of the aperture blackish-purple.

D'ORBIGNY, Voy. dans l'Amér. Mérid. p. 393, pl. 53. f. 3, 4.

A dark, shining, chestnut shell, faintly banded, of a slender acuminate form.

### Species 89. (Mus. Cuming.)

LITTORINA PORCATA. *Litt. testā globoso-ovatā, subventricosā, profundē umbilicatā, spirā parvā, anfractibus declivi-convezis, infernē expansis, undique spiraliter costatis; cærulescente-albā; columellā excavatā, aperturā fauce violaceo-purpureā.*

THE RIBBED LITTORINA. Shell globosely ovate, subventricose, deeply umbilicated, spire small, whorls slantingly convex, expanded towards the lower part, spi-

LITTORINA.—PLATE XVI.\*

rally ribbed throughout; bluish-white; columella excavated, interior of the aperture violet-purple.

PHILIPPI, *Proc. Zool. Soc.* 1845, p. 139.

*Hab.* Galapagos Islands (found on high exposed rocks); Cuming.

A small, open, bluish-white shell, spirally ribbed, violet-purple in the interior.

Species 90. (Fig. a, b, Mus. Cuming.)

LITTORINA FABALIS. *Litt. testā globosā, tenui, spirā brevissimā, minutā, anfractibus angustis, ultimo expanso; castaneo-rufā, lineis obscure reticulatā; aperturā amplā, columellā excavatā.*

THE LITTLE BEAN LITTORINA. Shell globose, thin, spire very short, minute, whorls narrow, the last expanded; chestnut-red, obscurely reticulated with lines; aperture large, columella excavated.

*Turbo fabalis*, Zoological Journal, vol. ii. p. 366. pl. 13. f. 10.

*Littorina Beanii*, Macgillivray.

*Littorina fabalis*, Thorpe.

*Hab.* Northern shores of England.

It is somewhat doubtful whether this little species is not an extreme variety of *L. littoralis*.

Species 91. (Mus. Cuming.)

LITTORINA SAXATILIS. *Litt. testā ovato-turbinatā, spirā acutā, anfractibus rotundatis, spiraliter tenuissimē lineari-sulcatis; olivaceo-fusā, nitente; aperturā circulari, columellā tenuē callosā.*

THE ROCK-INHABITING LITTORINA. Shell ovately turbinated, spire sharp, whorls rounded, spirally very finely linearly grooved; olive-brown, shining; aperture circular, columella thinly callous.

JOHNSTON, Berwick Club, vol. i. p. 268.

*Littorina neglecta*, Bean.

*Hab.* Northern shores of England.

This also is referred by some authors to a typical British species, *L. rudis*.





92



94



95



97



99



100

# LITTORINA.

## PLATE XVII. .

### Species 92. (Mus. Cuming.)

LITTORINA DECOLLATA. *Litt. testā ovatā, apice obtusā, erosā, levissimā, albidā, fasciā latā cærulescente cingulatā; anfractibus parum convexis, ultimo vidē angulato; aperturā ovalā, nigro-fuscā, zonis duabus albis, columellā excavato-depressā, nigro-fuscā.*

THE DECOLLATED LITTORINA. Shell ovate, obtuse and eroded at the apex, very smooth, whitish, encircled with a broad blue band; whorls but little convex, the last slightly angled; aperture ovate, blackish-brown, with two white zones, columella excavately depressed, blackish-brown.

KRAUSS, Philippi, Abbild. und Besch. Conch. vol. ii. p. 197. pl. 4. f. 3.

Hab. Natal.

A small patulate species, of a peculiar blue colour, white at the sutures, with aperture and columella dark chestnut-brown.

### Species 93. (Mus. Cuming.)

LITTORINA VENTRICOSA. *Litt. testā ovalā, ventricosā, basi rotundatā, transversim sulcatā, sulcis nonnunquam granulatis; albidā, strigis undatis rufis pictā; anfractibus convexis; aperturā semiorbiculari, patulā, carneā, columellā excavato-depressā, subcallosā, carneā.*

THE VENTRICOSE LITTORINA. Shell ovate, ventricose, rounded at the base, transversely grooved, grooves sometimes granulated; whitish, painted with wavy red streaks; whorls convex; aperture semiorbicular, patulate, flesh-colour, columella excavately depressed, rather callous, flesh-colour.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 15. pl. 6. f. 19.

Hab. Pulo-Penang.

A linearly grooved inflated shell, faintly red-streaked, with the aperture and columella of a characteristic flesh-colour.

### Species 94. (Mus. Cuming.)

LITTORINA DIEMENENSIS. *Litt. testā ovato-oblongā, basi subangulatā, transversim tenuissimē striatā, albido-cærulescente; anfractibus planiusculis, ultimo medio cærulescente villatō; aperturā ovalā, parvisculā, castaneo-fuscā.*

THE DIEMEN LITTORINA. Shell ovately oblong, slightly angled at the base, transversely very finely striated, whitish-blue; whorls rather flat, the last blue-banded

round the middle; aperture ovate, rather small, chestnut-brown.

QUOY and GAIMARD, Voy. de l'Astrolabe, vol. ii. p. 479. pl. 33. f. 8-11.

Hab. New Zealand.

A rather solid oblong species, conspicuously blue-banded, shining chestnut-brown in the aperture.

### Species 95. (Mus. Cuming.)

LITTORINA LÆVIS. *Litt. testā ovato-oblongā, acutā, albidā, cinereo marmoratā, interdum cæruleo fasciatā; anfractibus parum convexis, levibus, sub lente spiraliter striatis, ultimo basi angulato; aperturā ovalā, fusco-violaceā, columellā excavato-depressā, fusco-violaceā.*

THE SMOOTH LITTORINA. Shell ovately oblong, sharp, whitish, marbled with ash, sometimes blue-banded; whorls but little convex, smooth, beneath the lens spirally striated, last whorl angled at the base; aperture ovate, brownish-violet, columella excavately depressed, brownish-violet.

PHILIPPI, Pro. Zool. Soc. 1845, p. 140.

Hab. — ?

A shell of rather solid growth, angled towards the base, blue-banded or mottled, while the aperture and columella are deep brownish-violet.

### Species 96. (Fig. a, b, Mus. Cuming.)

LITTORINA SAYI. *Litt. testā ovalā, acutā, subventricosā, transversim multisulcatā, albā, punctis pallidē rufis ornatā; spirā violascente, anfractibus convexiusculis, supernē declivibus; aperturā ovato-orbiculari, columellā rufā.*

SAY'S LITTORINA. Shell ovate, sharp, rather ventricose, transversely many-grooved, white, ornamented with pale red dots; spire violet, whorls rather convex, slanting round the upper part; aperture ovate-orbicular, columella red.

PHILIPPI, Pro. Zool. Soc. 1845, p. 140.

Hab. Florida.

Of rather solid, ventricose growth, closely spirally grooved throughout, with the columella characteristically stained with red.



## Species 97. (Mus. Cuming.)

LITTORINA COLUMELLARIS. *Litt. testā ovato-conicā, acutā, subventricosā, densē striatā, albidā, interdum punctis luteis ferrugineisve sæpe in strigis confluentibus pictā; anfractibus convexis, suturis excavatis; aperturā semiorbiculari, columellā excavato-depressā, fusco-violaceo tinctā.*

- THE PILLARED LITTORINA. Shell ovately conical, sharp, rather ventricose, densely striated, whitish, sometimes painted with yellow or rust spots, often running into streaks; whorls convex, sutures excavated; aperture semiorbicular; columella excavately depressed, stained with brownish-violet.

D'ORBIGNY, Voy. dans l'Amér. Mérid. n. 284.

*Hab.* Pernambuco.

It is not without some doubt as to its correctness, that I adopt this shell as M. D'Orbigny's *L. columellaris*, from Pernambuco. It belongs, rather, to the eastern type of the genus, represented by *L. undulata*, and approaches closely to some colourless varieties of that species.

## Species 98. (Mus. Cuming.)

LITTORINA OBLIGATA. *Litt. testā globoso-turbinatā, tenui, ventricosā, spiraliter densē elevato-striatā, olivaceā vel rufo-castaneā, fasciis luteolis interruptis interdum cingulatā; anfractibus rotundatis; aperturā orbiculari.*

- THE TIED LITTORINA. Shell globosely turbinated, thin, ventricose, spirally densely elevately striated, olive or reddish-chestnut, sometimes encircled with interrupted yellowish bands; whorls rounded; aperture orbicular.

*Turbo obligatus*, Say, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 241.

*Littorina rudis*, Gould.

*Hab.* Maine, United States.

A light, turbinated shell, mostly of a bright reddish-chestnut colour, more or less freckled with yellowish interrupted bands.

## Species 99. (Mus. Cuming.)

LITTORINA MILLEGRANA. *Litt. testā ovato-conicoideā, ventricosā, acutā, albidā; anfractibus convexis, spiraliter densē grano-liratis; aperturā suborbiculari, carneo-fuscescente.*

- THE THOUSAND-GRAINED LITTORINA. Shell ovately conoid, ventricose, sharp, whitish; whorls convex, spirally densely grain-ridged; aperture nearly orbicular, flesh-brown.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 65. pl. 7. f. 15.

*Hab.* Red Sea.

Allied to the group figured in Plate II., of which *L. dilatata* is the type.

## Species 100. (Mus. Cuming.)

LITTORINA MAURITIANA. *Litt. testā ovato-conicā, solidā, carulescente-albā, transversim tenuissimē striatā; anfractibus parum convexis, ultimo subangulato; aperturā purpureo-fuscā, fasciā solitariā albā basali.*

- THE MAURITIUS LITTORINA. Shell ovately conical, solid, bluish-white, transversely very finely striated; whorls but little convex, the last slightly angled; aperture purple-brown, with a solitary white band at the base.

*Phasianella Mauritiana*, Lamarek, Anim. sans vert. vol. ii. p. 244.

*Littorina unifasciata*, Gray.

*Hab.* Mauritius. New Holland.

Distinguished by its solid, sharply conical form, and peculiarity of colouring.

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*Littorina Pl. XVIII.*



102 a.



102 b.



104 a.



104 b.



103 b.



105.



106.



107.

# LITTORINA.

## PLATE XVIII.

### Species 101. (Mus. Brit.)

**LITTORINA INTERMEDIA.** *Litt. testā oblongo-conicā, basi ventricosā, tenui, colore variā, lineis impressis exarātā; spirā acutā, anfractibus convexiusculis, ultimo rotundato; columellā albā vel violaceā.*

**THE INTERMEDIATE LITTORINA.** Shell oblong, conical, ventricose at the base, thin, various in colour, grooved with impressed lines; spire sharp, whorls convex, the last rounded; columella white or violet.

PHILIPPI, Pro. Zool. Soc. 1845, p. 141.

*Hab.* Red Sea, Natal, New Holland, Philippine Islands, Tahiti.

Closely allied to *L. scabra*, of which there are many forms not always readily definable.

### Species 102. (Mus. Brit.)

**LITTORINA NATALENSIS.** *Litt. testā parvā, ovato-conicā, acutā, cinereā, transversim striatā, tuberculato-nodosā; aperturā ovali, columellā nigrā, planiusculā, inferne productā et dilatātā.*

**THE NATAL LITTORINA.** Shell small, ovately conical, sharp, ash-coloured, transversely striated and tubercularly nodose; aperture oval, columella black, rather flat, produced and dilated at the lower part.

KRAUSS, Philippi, Abbild. und Besch. Conch. vol. ii. p. 160. pl. 3. f. 4.

*Hab.* Natal.

A small, solid species, belonging to that characteristic group of the genus represented most conspicuously by *L. dilatata*.

### Fig. 103. (Mus. Brit.)

Having figured a transversely banded example of *Littorina fasciata*, Gray, at Plate IV. fig. 20, which is not very typical of its general character, a specimen is here represented with longitudinally waved bands.

### Species 104. (Mus. Brit.)

**LITTORINA GLABRATA.** *Litt. testā ovato-oblongā, acutā, albido-carnēā, strigis pallidē fuscis obliquis pictā; anfractibus parum convexis, lœvibus, ultimo basi angulato; aperturā ovatā, rufescente, columellā depressā, violaceā.*

**THE SMOOTH LITTORINA.** Shell ovately oblong, sharp, whitish-flesh-colour, painted with oblique pale-brown streaks; whorls but little convex, smooth, the last angled; aperture ovate, reddish, columella depressed, violet.

PHILIPPI, Pro. Zool. Soc. 1845, p. 140.

*Hab.* Payta, Peru; Cuming.

Of a rather solid narrowly conical form, smooth, painted in a characteristic manner with oblique brown hair-streaks.

### Species 105. (Mus. Cuming.)

**LITTORINA TROCHOIDES.** *Litt. testā elongato-conicā, subpyramidalī, sordidē griseā; anfractibus convexis, validē tuberculato-nodosis, ad suturam impressis; aperturā parvā, subquadrato-orbiculari, columellā excavato-depressā, nigrescente.*

**THE TROCHOID LITTORINA.** Shell elongately conical, somewhat pyramidal, dull grey; whorls convex, strongly tubercularly nodose, impressed at the suture; aperture small, somewhat squarely orbicular, columella excavately depressed, blackish.

GRAY, Zoology of Beechey's Voyage, p. 140.

*Hab.* —? \*

Chiefly distinguished from its congeners by a more contracted and pyramidal growth.

### Species 106. (Mus. Cuming.)

**LITTORINA GRANOSA.** *Litt. testā ovato-ventricosā, crassā, granoso-tuberculatā, sordidē griseā; aperturā parvā, columellā arcuato-depressā, subcallosā.*

**THE GRAINED LITTORINA.** Shell ovately ventricose, thick, granosely tubercled, dull grey; aperture small, columella arcuately depressed, rather callous.

PHILIPPI, Abbild. und Besch. Conch. vol. iii. p. 65. pl. 7. f. 14.

*Hab.* Guinea, Liberia.

The growth of this species is quite the opposite to the preceding, being broad and obese though belonging to the same type.

### Species 107. (Mus. Brit.)

**LITTORINA MODESTA.** *Litt. testā ovato-oblongā, albidā,*

LITTORINA. PLATE XVIII.

*rarius obsolete rufopunctata, transversus profunde sulcata; anfractibus convexiusculis; apertura semiorbiculari, columella latissime excavato-depressa, aurantio-fusca, superne purpureo-maculata.*

THE MODEST LITTORINA. Shell ovately-oblong, whitish, rarely obsolete dotted with red, transversely deeply grooved; whorls rather convex; aperture semiorbicular, columella very broadly excavately depressed,

orange-brown, blotched with purple at the upper part.

PHILIPPI, Proc. Zool. Soc. 1845, p. 141.

Hab. Sitka.

A dull-white shell, sometimes speckled with red, chiefly distinguished by the regularity with which it is spirally grooved.

# LITTORINA.

	Plate.	Species.		Plate.	Species.
aberrans, <i>Philippi</i> .....	XII.	59	grano-costata, <i>Reeve</i> .....	XV.	79
Adamsii, <i>Reeve</i> .....	XVI.	85	granosa, <i>Philippi</i> .....	XVIII.	106
Africana, <i>Philippi</i> .....	VIII.	37	granularis, <i>Gray</i> .....	XIII.	68
ahenea, <i>Reeve</i> .....	III.	15	Grœnlandica, <i>Menke</i> .....	X.	52
albicans, <i>Metcalf</i> .....	IX.	44	guttata, <i>Philippi</i> .....	XIV.	76
ambigua, <i>Nuttall</i> .....	XII.	64	intermedia, <i>Gray</i> .....	XVIII.	101
araucana, <i>D'Orbigny</i> .....	XVI.	88	irrorata ( <i>Turbo</i> ), <i>Say</i> .....	XI.	56
arboricola, <i>Reeve</i> .....	VI.	27	Knysnaensis, <i>Krauss</i> .....	XIV.	75
arctica, <i>Müller</i> .....	XIII.	69	lævis, <i>Philippi</i> .....	XVII.	95
arenica, <i>Nuttall</i> .....	VIII.	40	lemniscata, <i>Philippi</i> .....	II.	6
balteata, <i>Reeve</i> .....	XIV.	71	littoralis ( <i>Nerita</i> ), <i>Linn.</i> .....	VII.	34
Basteroli, <i>Payraudenu</i> .....	XIV.	72	littorea ( <i>Turbo</i> ), <i>Linn.</i> .....	IV.	28
Beauii, <i>Macgillivray</i> .....	XVI.	90	luctuosa, <i>Reeve</i> .....	XIII.	65
brevicula ( <i>Turbo</i> ), <i>Philippi</i> .....	X.	51	Malaccana, <i>Philippi</i> .....	II.	7
cœrulea, <i>Costa</i> .....	XIV.	72	Mauritiana ( <i>Phasianella</i> ), <i>Lam.</i> .....	XVII.	100
bullata ( <i>Trachus</i> ), <i>Martyn</i> .....	I.	1	melanostoma, <i>Gray</i> .....	IX.	45
Canariensis, <i>D'Orbigny</i> .....	VIII.	40	mespilum ( <i>Helix</i> ), <i>Müllfeldt</i> .....	XV.	77
carinata, <i>D'Orbigny</i> .....	X.	50	millegrana, <i>Philippi</i> .....	XVII.	99
carinifera ( <i>Phasianella</i> ), <i>Menke</i> .....	VI.	29	minima ( <i>Turbo</i> ), <i>Wood</i> .....	XVI.	86
castanea, <i>Adams and Reeve</i> .....	VI.	26	modesta, <i>Philippi</i> .....	XVIII.	107
castanea, <i>Deshayes</i> .....	X.	52	muricata ( <i>Turbo</i> ), <i>Linn.</i> .....	II.	11
cineta, <i>Quoy</i> .....	XI.	53	Natalensis, <i>Krauss</i> .....	XVIII.	102
cingulata, <i>Philippi</i> .....	VI.	25	Naticoides, <i>D'Orbigny</i> .....	XV.	77
columellaris, <i>D'Orbigny</i> .....	XVII.	97	nebbylosa ( <i>Phasianella</i> ), <i>Lam.</i> .....	XI.	55
conica, <i>Philippi</i> .....	VIII.	36	neglecta, <i>Bean</i> .....	XVI.	91
coronaria ( <i>Monodonta</i> ), <i>Lam.</i> .....	I.	2	Neritoides ( <i>Turbo</i> ), <i>Linn.</i> .....	XIV.	72
Cumingii, <i>Philippi</i> .....	II.	8	Newcombi, <i>Reeve</i> .....	VI.	28
debilis, <i>Philippi</i> .....	XIV.	70	nigrolineata, <i>Gray</i> .....	VII.	33
decollata, <i>Krauss</i> .....	XVII.	92	nodosa, <i>Gray</i> .....	II.	13
Djemenensis, <i>Quoy</i> .....	XVII.	94	Novæ-Zelandiæ, <i>Reeve</i> .....	XIV.	74
dilatata, <i>D'Orbigny</i> .....	II.	9	obesa, <i>Sowerby</i> .....	IX.	41
fabalis ( <i>Turbo</i> ) .....	XVI.	90	obligata ( <i>Turbo</i> ), <i>Say</i> .....	XVII.	98
fasciata, <i>Gray</i> .....	IV.	20	obtusata, <i>Menke</i> .....	VII.	34
Feejeensis, <i>Reeve</i> .....	XV.	82	pagodus ( <i>Turbo</i> ), <i>Linn.</i> .....	I.	4
filosa, <i>Sowerby</i> .....	V.	24	pallascens, <i>Philippi</i> .....	IX.	43
flammen, <i>Philippi</i> .....	IX.	46	palliat ( <i>Turbo</i> ), <i>Say</i> .....	VII.	31
Fortunei, <i>Reeve</i> .....	IX.	42	Paludinella, <i>Reeve</i> .....	XVI.	84
Frascri, <i>Reeve</i> .....	X.	47	papillosa, <i>Deshayes</i> .....	I.	1
fusca, <i>Pfeiffer</i> .....	XV.	77	perdix, <i>King</i> .....	VI.	29
glabrata, <i>Philippi</i> .....	XVIII.	104	petraea, <i>Gray</i> .....	XIV.	72
glans, <i>Reeve</i> .....	XII.	62	Philippiana, <i>Reeve</i> .....	V.	22
grandis, <i>Middendorf</i> .....	III.	16	picea, <i>Reeve</i> .....	XV.	53

# LITTORINA.—INDEX.

	Plate.	Species.		Plate.	Species.
<i>picta</i> , <i>Philippi</i> . . . . .	XV.	80	<i>sulcata</i> , Menke . . . . .	X.	52
<i>Pintado</i> ( <i>Turbo</i> ), Wood . .	XI.	54	<i>sulculosa</i> , <i>Philippi</i> . . . . .	VIII.	39
<i>Planaxis</i> , <i>Nuttall</i> . . . . .	VIII.	38	<i>tectum-Persicum</i> ( <i>Turbo</i> ), Linn.	I.	3
<i>porcata</i> , <i>Philippi</i> . . . . .	XVI.	89	<i>tenebrata</i> , <i>Nuttall</i> . . . . .	XI.	58
<i>pulchella</i> , C. B. Adams . .	XVI.	85	<i>tenebrosa</i> ( <i>Turbo</i> ), Montagu . .	VII.	30
<i>pulchra</i> , <i>Sowerby</i> . . . . .	III.	17	<i>tenuis</i> , <i>Philippi</i> . . . . .	VIII.	35
<i>punctata</i> ( <i>Turbo</i> ), Gmelin .	XIII.	66	<i>tessellata</i> , <i>Philippi</i> . . . . .	X.	48
<i>pyramidalis</i> , <i>Quoy</i> . . . .	II.	14	<i>Thersites</i> , <i>Reeve</i> . . . . .	XV.	78
<i>rudis</i> ( <i>Turbo</i> ), Donovan . .	VII.	33	<i>trochoides</i> , <i>Gray</i> . . . . .	XVIII.	105
<i>rufa</i> , <i>Recluz</i> . . . . .	XVI.	87	<i>undulata</i> , <i>Gray</i> . . . . .	XIII.	67
<i>rugosa</i> , <i>Menke</i> . . . . .	VII.	32	<i>undulata</i> , D'Orbigny . . . . .	X.	48
<i>saxatilis</i> , <i>Johnston</i> . . . .	XVI.	91	<i>unifasciata</i> , <i>Gray</i> . . . . .	XVII.	100
<i>Savi</i> , <i>Philippi</i> . . . . .	XVII.	96	<i>varia</i> , <i>Sowerby</i> . . . . .	IV.	19
<i>scabra</i> ( <i>Helix</i> ), Linn. . . .	V.	21	<i>ventricosa</i> , <i>Philippi</i> . . . . .	XVII.	93
<i>Sieboldii</i> , <i>Philippi</i> . . . .	V.	23	<i>vilis</i> , <i>Menke</i> . . . . .	II.	12
<i>simplex</i> , <i>Reeve</i> . . . . .	XII.	63	<i>vulgaris</i> , <i>Sowerby</i> . . . . .	IV.	18
<i>Sitchana</i> , <i>Philippi</i> . . . .	X.	49	<i>zebra</i> ( <i>Turbo</i> ), Wood . . . . .	XII.	61
<i>spinulosa</i> , <i>Philippi</i> . . . .	II.	5	<i>ziczac</i> ( <i>Trochus</i> ), Chemnitz . .	XI.	57
<i>striata</i> , <i>King</i> . . . . .	VIII.	40	<i>zonaria</i> , <i>Bean</i> . . . . .	VII.	33
<i>subnodosa</i> , <i>Philippi</i> . . .	"	"			

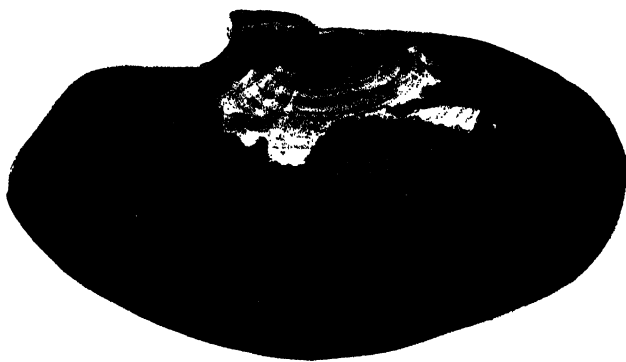
MONOGRAPH  
OF THE GENUS  
SOLETELLINA.

“ My soul is full of longing  
For the secret of the sea,  
And the heart of the great ocean  
Sends a thrilling pulse through me ”  
*Longfellow.*





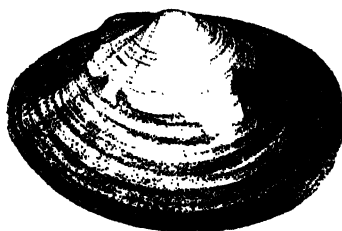




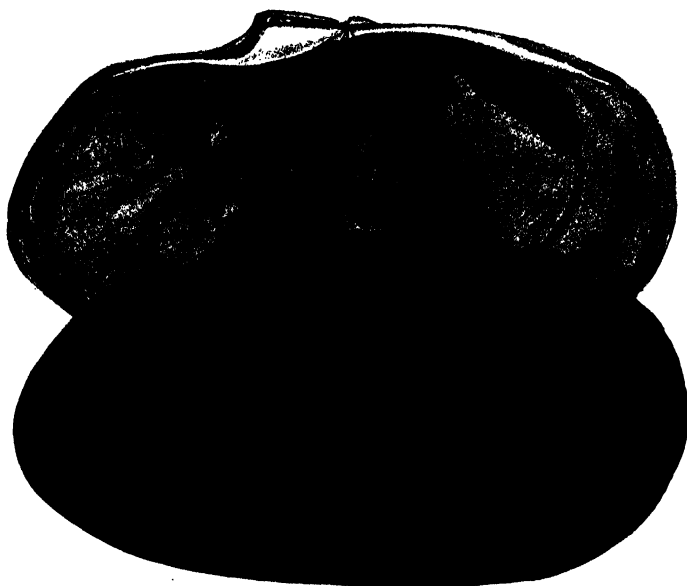
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# SOLETELLINA.

PLATE I.

Genus SOLETELLINA, De Blainville.

*Testa oblongo-transversa vel ovata, compressa, plerumque aquiculæis, subæquilateralis, levigata vel concentricè striata, plerumque purpurea, posticè sæpe biradiata, epidermide cornæa induta, latere antico rotundato, postico cario, nunc brevi, truncato, nunc acuminato, umbonibus parvis. Cardo drule unico parvo erecto in calicem sinistram, duobus in calicem sinistram interdum bifurcatis. Ligamentum subampullam, externum, sub callositate oblongâ conspicuâ internâ positum. Impressio muscularis pallii ampliter sinuata.*

Shell oblong-transverse or ovate, compressed, generally equivalve, nearly equilateral, smooth or concentrically striated, generally purple and mostly two-rayed posteriorly, covered with a horny epidermis, anterior side rounded, posterior various, sometimes shortly truncated, sometimes acuminate, umboes small. Hinge with a single small erect tooth in the left valve, two teeth in the right valve, sometimes bifurcated. Ligament rather large, external, placed upon a conspicuous oblong internal callosity. Muscular impression of the mantle largely sinuous.

The genus *Soletellina* was founded by De Blainville in his 'Manuel de Malacologie' for the purpose of grouping together "four or five species of *Solen* of Lamarck." He does not particularize the species, but takes Lamarck's *Solen rostratus* (*Solen diphos*, Linnaeus) as the type. The genus, as lately arranged and named by M. Deshayes in Mr. Cuming's cabinet, includes but this one Lamarckian species. It includes also the *Solen orbiculatus* of Wood, Index Test. Supplement, typical of another section; and, agreeing with these two very well-defined types, we introduce a series of twenty-one characteristic species.

The species of large size allied to *S. diphos* are from the Moluccas or Philippine Islands. Of the other division of the genus the finest and most characteristic example is *S. Nuttallii*, from California, and an allied species, *S. Japonica*, which inhabits a nearly similar latitude in the opposite hemisphere. An intermediate, represented by *A. nitida*, appears in New Zealand.

Species 1. (Mus. Cuming.)

SOLETELLINA CONSOBRINA. *Sol. testâ ovato-transversâ, flexuoso-arcuatâ, subæquilateralî, rugoso-striatâ, pur-*

*purascente-cæruleâ, epidermide cornæâ olivaceâ indutâ, latere antico subangustè rotundato, postico obliquè truncato, compressè rostrato.*

THE ALLIED SOLETELLINA. Shell ovately transverse, flexuously arched, nearly equilateral, roughly striated, purple-blue, covered with an olive horny epidermis, anterior side rather narrowly rounded, posterior obliquely truncated, compressly beaked.

DESHAYES, MS., Mus. Cuming.

Hab. Philippine Islands; Cuming.

Distinguished by a compressed beak-like flexure on the posterior side.

Species 2. (Mus. Cuming.)

SOLETELLINA NYMPHALIS. *Sol. testâ ovato-transversâ, superne trigonâ, plano-compressâ, ex æquilateralî, levigatâ, fulrescente-cornæâ, nitente, versus umbones roseo-tinctâ, epidermide fulrescente cornæâ prope marginem indutâ, latere antico latè rotundato, postico breviorè, subattenuato-rostrato.*

THE WATER SOLETELLINA. Shell ovately transverse, triangular at the upper part, flatly compressed, scarcely equilateral, smooth, fulvous-flesh, shining, stained with rose towards the umboes, covered near the margin with a yellowish horny epidermis, anterior side broadly rounded, posterior shorter, somewhat attenuately beaked.

DESHAYES, MS., Mus. Cuming.

Hab. Australia.

An Australian species, of a distinct typical character from the preceding, flat and smooth, sloping triangularly on each side from the umboes.

Species 3. (Mus. Cuming.)

SOLETELLINA EPIDERMIA. *Sol. testâ ovato-transversâ, convexiusculâ, ex æquilateralî, rudè plicato-striatâ, sordidè calcareo-albâ, versus umbones carneis-tinctâ, epidermide cornæâ fulvâ nitente indutâ, latere antico latè rotundato, postico breviorè subattenuato-rostrato.*

THE EPIDERMID SOLETELLINA. Shell ovately transverse, rather convex, scarcely equilateral, rudely plicately striated, dull chalk-white, flesh-tinged towards the umboes, covered with a fulvous shining horny epi-

SOLETELLINA.—PLATE I.

dermis, anterior side broadly rounded, posterior side shorter, somewhat attenuately beaked.

DESHAYES, MS., Mus. Cuming.

*Hab.* Port Adelaide, Australia.

More convex than the preceding species, and differing also in being roughly plicately striated, covered with a peculiarly glittering transparent deciduous horny epider-

Species 4. (Mus. Cuming.)

SOLETELLINA CUMINGIANA. *Sol. testā oblongo-transversā, compressiusculā, æquilaterali, rugoso-striatā, purpurascens-cæruleā, posticè biradiatā, epidermide olivaceā*

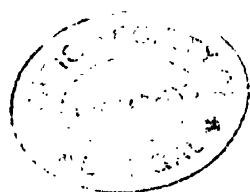
*indulā, lateribus supernè subæqualiter rectis, anticolatè rotundato, postico obliquè rotundato, subflexuoso-impresso.*

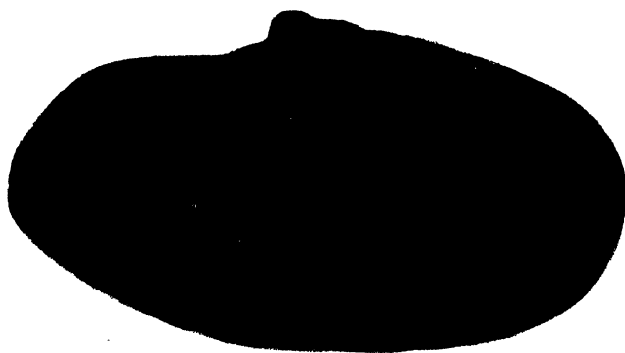
CUMING'S SOLETELLINA. Shell oblong-transverse, rather compressed, equilateral, roughly striated, purple-blue, posteriorly two-rayed, covered with an olive epidermis, sides almost equally straight at the upper part, anterior broadly rounded, posterior obliquely rounded, slightly flexuously impressed.

DESHAYES, MS., Mus. Cuming.

*Hab.* Island of Negros, Philippines; Cuming.

The form of this elegant species is simply oblong-ovate, the anterior side being the broader, whilst the posterior is but slightly flexuously impressed.

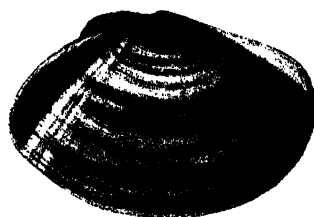




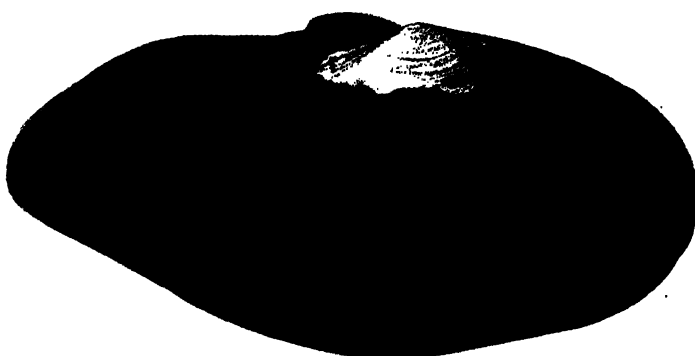
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# SOLETELLINA.

## PLATE II.

### Species 5. (Mus. Cuming.)

**SOLETELLINA ADAMSII.** *Sol. testâ elongato-transversâ, convexiusculâ, inæquilaterali, cæruleo-purpurâ, posticè biradiatâ, epidermide olivaceâ nitente indutâ, latere antico rotundato, postico paulo longiore, obliquè compresso-truncato.*

**ADAMS'S SOLETELLINA.** Shell elongately transverse, rather convex, inequilateral, bluish-purple, posteriorly two-rayed, covered with a shining olive epidermis, anterior side round, posterior a little the longer, obliquely compressly truncated.

**DESHAYES, MS., Mus. Cuming.**

*Hab.* Island of Negros, Philippines.

Chiefly distinguished by the posterior end being slightly obliquely truncated, and rather compressed.

### Species 6. (Mus. Cuming.)

**SOLETELLINA NITIDA.** *Sol. testâ oblongo-ovatâ, compressiusculâ, subæquilaterali, purpurascenscente-albâ, epidermide corneâ lævi transluentiâ nitente indutâ, latere antico rotundato, postico breviorè, declivi-acuminato, et concentricè rugosâ.*

**THE SHINING SOLETELLINA.** Shell rather compressed, nearly equilateral, purplish-white, covered with a smooth, shining, transparent, horny epidermis, anterior side rounded, posterior shorter, slopingly acuminate, and concentrically wrinkled.

**GRAY, MS., Mus. Brit.**

*Hab.* New Zealand; Strange.

Of an extremely delicate purple-white substance, covered with a peculiarly clear, glittering, horny epidermis.

### Species 7. (Mus. Cuming.)

**SOLETELLINA BIRADIATA.** \**Sol. testâ ovalo-transversâ, convexo-planâ, æquilaterali, lævigatâ, purpureo et*

*griseo transversim strigatâ, posticè biradiatâ, lateribus supernè arcuato-declivibus, deinde subattenuato-rotundatis.*

**THE BIRADIATE SOLETELLINA.** Shell ovately transverse, convexly flattened, equilateral, smooth, transversely streaked with purple and grey, posteriorly two-rayed, sides arcuately sloped at the upper part, then somewhat attenuately rounded.

*Solen biradiatus*, Wood, Gen. Conch. pl. 33. f. 1, Index Test. pl. 3. f. 26.

*Hab.* Port Adelaide, Australia.

Characterized on the posterior side with two conspicuous narrow purple rays, on a fulvous halo-like ground, breaking through the transverse blue and purple streaks.

### Species 8. (Mus. Cuming.)

**SOLETELLINA DIPHOS.** *Sol. testâ elongato-transversâ, subcompressâ, subæquilaterali, purpureâ, posticè biradiatâ, epidermide corneâ olivaceâ indutâ, latere antico rotundato, postico flexuosè subacuminato-rostrato.*

**THE TWO-RAYED SOLETELLINA.** Shell elongately transverse, rather compressed, nearly equilateral, purple, posteriorly two-rayed, covered with an olive horny epidermis, anterior side rounded, posterior flexuously sub-acuminately beaked.

*Solen diphos*, Linnaeus, Mantissa, p. 554. Chemnitz, Conch. Cab. vol. vi. p. 68. pl. 7. f. 53, 54.

*Solen rostratus*, Lamarek.

*Psammobia rostrata*, Deshayes.

*Soletebella radiata*, De Blainville.

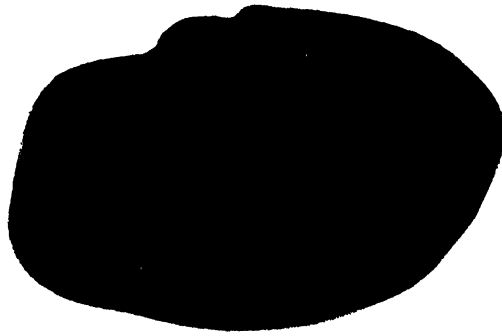
*Hab.* Malacca.

\* Distinguished from its allied species by the flexuous acuminately beaked form of the posterior extremity.









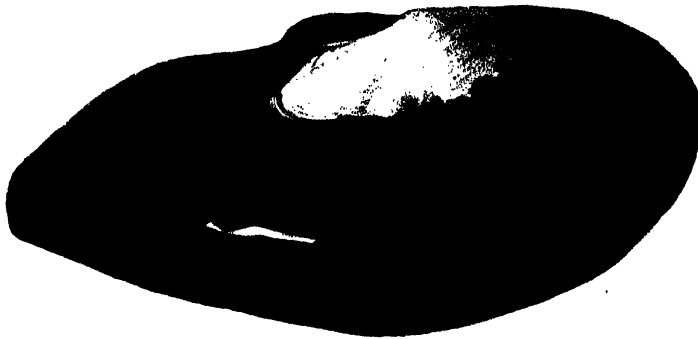
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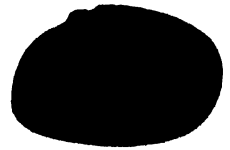
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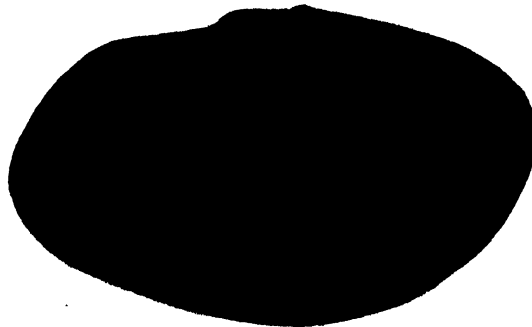
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# SOLETELLINA.

## PLATE III.

### Species 9. (Mus. Cuming.)

**SOLETELLINA TRUNCATA.** *Sol. testâ ovato-transversâ, peculiariter obliquè contortâ, subæqualiterali, inæquivalvi, valvâ sinistrâ convexâ, dextrâ planâ, nigricante-purpureâ, epidermide olivaceâ indutâ, latere antico rotundato, postico brevi, latissimè truncato.*

**THE TRUNCATED SOLETELLINA.** Shell ovately transverse, peculiarly obliquely contorted, nearly equilateral, inequivalve, left valve convex, right flattened, blackish-purple, covered with an olive epidermis, anterior side rounded, posterior short, very broadly truncated.

*Hab.* Moluccas.

An interesting species, distinguished from all others by the flattened growth of the right valve, and by its general oblique contortion.

### Species 10. (Mus. Cuming.)

**SOLETELLINA SILIQUA.** *Sol. testâ angustè transversâ, tenui, æquilaterali, lævi, carneo-albâ, epidermide corneâ olivaceâ translucidâ nitente indutâ, posticè pallidè biradiatâ, latere antico rotundato, postico obliquè acuminato-rotundato.*

**THE POD SOLETELLINA.** Shell narrowly transverse, thin, equilateral, smooth, flesh-white, covered with a shining transparent olive horny epidermis, faintly two-rayed on the posterior side, anterior side rounded, posterior obliquely acuminately rounded.

*Hab.* New Zealand; Hart.

A delicate flesh-tinged shell, covered with a thin transparent shining horny epidermis, exhibiting the two posterior rays so frequently characteristic of this genus.

### Species 11. (Mus. Cuming.)

**SOLETELLINA DONACIOIDES.** *Sol. testâ oblongo-transversâ, tenui, inæquilaterali, levigatâ, latè castaneo-radiatâ, epidermide crassâ corneâ translucidâ indutâ, lateribus æqualiter rotundatis, postico multò breviorè.*

**THE DONAX-LIKE SOLETELLINA.** Shell oblong-transverse, thin, inequilateral, smooth, broadly chestnut-rayed, covered with a thick, transparent, horny epidermis, sides equally rounded, posterior much the shorter.

*Hab.* Port Adelaide, Australia.

This little species does not present the usual inequality in the form of the lateral extremities, and it is enveloped in an unusually thick transparent horny epidermis, resembling that of *Solemya*.

### Species 12. (Mus. Cuming.)

**SOLETELLINA ACUMINATA.** *Sol. testâ elongato-transversâ, inæquilateralî, cærulescente-purpureâ, epidermide nigricante-olivaceâ indutâ, ad umbones erosâ, latere antico rotundato, postico obliquè flexuoso-acuminato, angulum obtusum rugosum formante.*

**THE ACUMINATED SOLETELLINA.** Shell elongately transverse, inequilateral, bluish-purple, covered with a blackish-olive epidermis, eroded at the umboes, anterior side rounded, posterior obliquely flexuously acuminated, forming an obtuse wrinkled angle.

*DESHAYES, MS., Mus. Cuming.*

*Hab.* Philippine Islands.

Of rather more rough and solid structure than its allies, with a darker epidermis, and conspicuous above all in having the posterior extremity obliquely acuminated.

### Species 13. (Mus. Cuming.)

**SOLETELLINA INCERTA.** *Sol. testâ oblongo-transversâ, posticè latiore, tenui, inæquilateralî, lævi, epidermidè tenui corneâ olivaceâ indutâ, posticè obscure biradiatâ, latere antico rotundato, postico obliquè truncato.*

**THE DOUBTFUL SOLETELLINA.** Shell oblong-transverse, broader posteriorly, thin, inequilateral, smooth, covered with a thin horny epidermis, obscurely two-rayed posteriorly, anterior side rounded, posterior obliquely truncated.

*DESHAYES, MS., Mus. Cuming.*

*Hab.* New Zealand; Strange.

Of simple form, with the posterior side only very slightly compressly truncated.

### Species 14. (Mus. Cuming.)

**SOLETELLINA ATRATA.** *Sol. testâ ovato-transversâ, posticè latiore, tenui, concentricè striatâ, atro-purpureâ, epidermide corneâ olivaceâ indutâ, posticè biradiatâ, latere antico rotundato, postico lumidulo, rotundato-truncato.*

# SOLETELLINA.—PLATE III.

THE DARK SOLETELLINA. Shell ovately transverse, broader posteriorly, thin, concentrically striated, dark purple, covered with a horny olive epidermis, two-rayed posteriorly, anterior side rounded, posterior rather swollen, rotundately truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* Catanauan, Island of Luzon, Philippines; Cuming.

Closely allied to the preceding species, but of a more *Danaus*-like form, and darker-coloured.

Species 15. (Mus. Cuming.)

SOLETELLINA PLANILATA. *Sol. testâ oblongo-transversâ,*

*plano-convexâ, subæquilaterali, atro-purpureâ, epidermide olivaceo-fuscâ indutâ, latere antico rotundato, postico obliquè rotundato-truncato.*

THE FLAT SOLETELLINA. Shell oblong-transverse, flatly convex, nearly equilateral, dark purple, covered with an olive-brown epidermis, anterior side rounded, posterior obliquely rotundately truncated.

*Hab.* Moluccas.

Chiefly distinguished from the larger typical species of the genus by its less elongately transverse growth and darker colour.





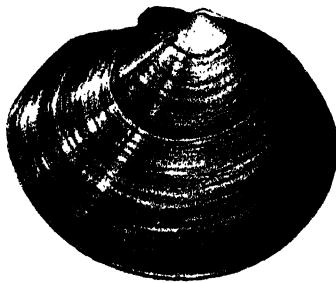
16.



17.



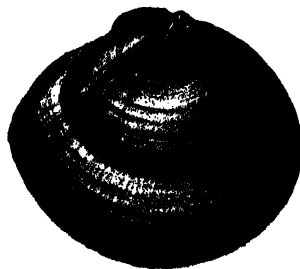
18.



19.



20 b.



21.

# SOLETELLINA.

## PLATE IV.

### Species 16. (Mus. Cuming.)

**SOLETELLINA JAPONICA.** *Sol. testâ orbiculari-transversâ, plano-convexâ, inequilateralî, lævigatâ, purpurascens-albâ, eximie radiatâ, epidermide corneâ fulvo-olivaceâ translucentâ indutâ, latere antico latè rotundato, postico brevi, obliquè subacuminato-truncato.*

**THE JAPAN SOLETELLINA.** Shell orbicularly transverse, flatly convex, inequilateral, smooth, purple-white, delicately rayed, covered with a transparent, fulvous-olive, horny epidermis, anterior side broadly rounded, posterior short, obliquely subacuminately truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* Japan; Dr. Siebold.

Delicately purple-rayed upon a white ground, beneath a characteristic, transparent, shining, fulvous-olive epidermis.

### Species 17. (Mus. Cuming.)

**SOLETELLINA REVERSA.** *Sol. testâ obliquè orbiculatâ, tenui, pellucidâ, valdè inequilateralî, lævigatâ, cærulescente-albâ, epidermide tenui corneâ translucentâ flavescens-corneâ indutâ, latere antico brevissimo, postico obliquè latè expanso, ambobus rotundatis.*

**THE REVERSED SOLETELLINA.** Shell obliquely orbicular, thin, transparent, very inequilateral, smooth, bluish-white, covered with a thin, transparent, yellowish-horny epidermis, anterior side very short, posterior obliquely broadly expanded, both rounded.

*Hab.* Malacca; Dr. Traill.

In this and the following species, both very thin and horny, the sides are, as it were, reversed, the posterior being much more broadly and more largely developed than the anterior.

### Species 18. (Mus. Cuming.)

**SOLETELLINA ORBICULATA.** *Sol. testâ obliquè orbiculatâ, tenui, semipellucidâ, valdè inequilateralî, lævigatâ, nitente, cærulescente, epidermide corneâ translucentâ flavescens-corneâ indutâ, latere antico brevissimo, postico latè subobliquè expanso, ambobus rotundatis.*

**THE ORBICULAR SOLETELLINA.** Shell obliquely orbicular, thin, semitransparent, very inequilateral, smooth, shining, bluish-white, covered with a yellowish-olive, transparent, horny epidermis, anterior side very short, posterior side broad, rather obliquely expanded, both rounded.

*Solen orbiculatus*, Wood, Index Testaceologicus, Supp. p. 3. pl. i. f. 4.

*Hab.* Sumatra; Captain Adolphe Martin.

This species scarcely differs from the preceding, yet it is scarcely so obliquely expanded, and the difference, though slight, is characteristic.

### Species 19. (Mus. Cuming.)

**SOLETELLINA NUTTALLII.** *Sol. testâ obliquè oratâ, subæquilateralî, inequivalvi, valvâ dextrâ planiore, lævigatâ, ad marginem posteriorem dense striatâ, albiddâ, purpurascens eximie lineatâ, posticè biradiatâ, epidermide corneâ fulvo-olivaceâ pellucido-nitente indutâ, latere antico rotundato, postico brevi, obliquè truncato.*

**NUTTALL'S SOLETELLINA.** Shell obliquely ovate, nearly equilateral, inequivalve, right valve the flatter, smooth, densely striated at the posterior margin, white, delicately tinged with purple, two-rayed posteriorly, covered with a transparent, shining, fulvous-olive, horny epidermis, anterior side rounded, posterior short, obliquely truncated.

CONRAD, Journ. Acad. Nat. Sci. Phil.

*Hab.* San Diego, California; Nuttall.

This very beautiful species is highly distinguished by its remarkably transparent and richly coloured horny epidermis.

### Species 20. (Fig. a, b. Mus. Cuming.)

**SOLETELLINA TUMENS.** *Sol. testâ ovato-transversâ, tumidâ, inequilateralî, tenui, irregulariter rugoso-striatâ, atro-purpureâ, posticè biradiatâ, epidermide olivaceâ tenui deciduâ indutâ, latere antico rotundato, postico brevi, obliquè subacuminato-truncato.*

**THE SWOLLEN SOLETELLINA.** Shell ovately transverse, swollen, inequilateral, thin, irregularly roughly striated, dark purple, posteriorly two-rayed, covered with a thin, deciduous, olive epidermis, anterior side rounded, posterior short, obliquely sub-acuminately truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* Island of Negros, Philippines; Cuming.

Of light tumid growth, still characterized by the two light posterior rays.

### Species 21. (Mus. Cuming.)

**SOLETELLINA OBSCURATA.** *Sol. testâ trigono-orbiculari, subobliquâ, subæquilateralî, inequivalvi, valvâ dextrâ planiore, lævigatâ, posticè corrugata, purpureo-griseâ, hic illic saturatè fusciatâ, latere antico rotundato, postico breviorè, obliquè truncato.*

**THE DARKENED SOLETELLINA.** Shell triangularly orbicular, rather oblique, nearly equilateral, inequivalve, right valve the flatter, smooth, wrinkled posteriorly, purple-grey, here and there darker-banded, anterior side rounded, posterior shorter, obliquely truncated.

DESHAYES, MS., Mus. Cuming.

*Hab.* — ?

A very characteristic species, belonging to the same peculiar type of the genus as *S. Japonica* and *Nuttallii*, but quite distinct specifically from either.





## SOLETELLINA.

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	Plate.	Species.		Plate.	Species.
<i>acuminata, Deshayes</i> . . . . .	III.	12	<i>nitida, Gray</i> . . . . .	II.	6
<i>Adamsii, Deshayes</i> . . . . .	II.	5	<i>Nuttallii, Conrad</i> . . . . .	IV.	19
<i>atrata, Deshayes</i> . . . . .	III.	14	<i>nymphalis, Deshayes</i> . . . . .	I.	2
<i>biradiata (Solen), Wood</i> . . . . .	II.	7	<i>orbiculata (Solen), Wood</i> . . . . .	IV.	18
<i>consobrina, Deshayes</i> . . . . .	I.	1	<i>obscurata, Deshayes</i> . . . . .	IV.	21
<i>Cumingiana, Deshayes</i> . . . . .	I.	4	<i>planulata, Reeve</i> . . . . .	III.	15
<i>diphos (Solen), Linnaeus</i> . . . . .	II.	8	<i>radiata, De Blainville</i> . . . . .	II.	8
<i>Donacioides, Reeve</i> . . . . .	III.	11	<i>reversa, Reeve</i> . . . . .	IV.	17
<i>epidermia, Deshayes</i> . . . . .	I.	3	<i>siliqua, Reeve</i> . . . . .	III.	10
<i>incerta, Deshayes</i> . . . . .	III.	13	<i>truncata, Reeve</i> . . . . .	III.	9
<i>Japonica, Deshayes</i> . . . . .	IV.	16	<i>tumens, Deshayes</i> . . . . .	IV.	20



# MONOGRAPH

OF THE GENUS

C A P S A.

“ Huge ocean shows within its yellow strand  
A habitation marvellously planned  
For life to occupy.”—*Southey*.



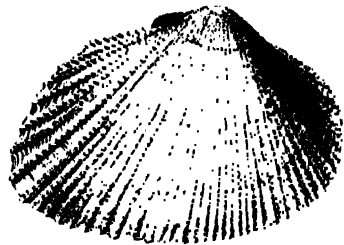




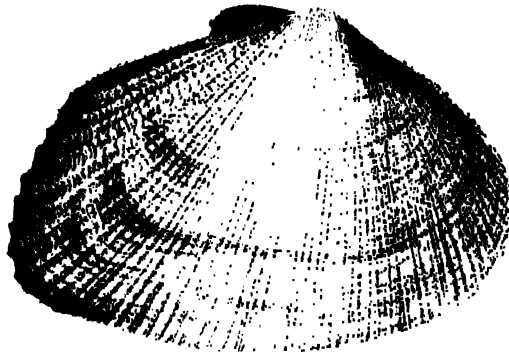
1a.



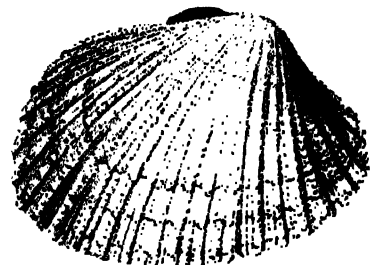
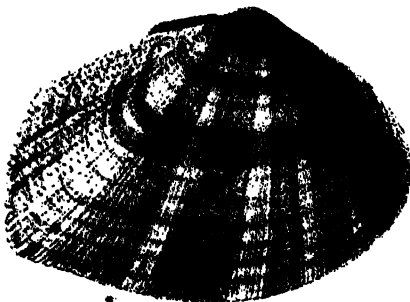
1b.



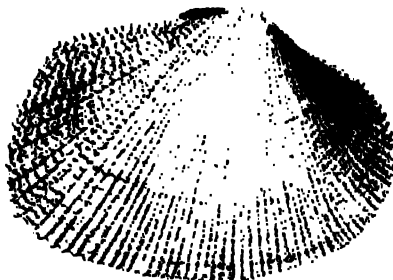
1c.



1d.



1f.



# CAPSA.

## PLATE I.

### Genus CAPSA, Bruguière.

*Testa oblongo-transversa, subquadrata, ventricosa, ad latera paululum lians, inaequilateralis, latere postico longiore, Cardo, in utraq[ue] valvâ dentibus duobus brevibus centralibus, quorum, in valvâ dextrâ, postico majore, subrecurso, in valvâ sinistrâ, antico majore, trigono, solido, obtusè bifido. Ligamentum subamplum, externum. Impressio pallii sinu magno, lato.*

Shell oblong-transverse, somewhat square, a little gaping at the sides, inequilateral, posterior side the longer. Hinge with two central teeth in each valve, of which, in the right valve, the posterior is the larger, a little recurved, in the left valve the anterior is the larger, triangular, solid, and obtusely bifid. Ligament rather large, external. Impression of the mantle showing a large broad sinus.

On reference to the 'Encyclopédie Méthodique,' Pl. 231, it will be seen that the very characteristic bivalve shell represented in the accompanying Plate, the old *Venus deflorata* of Linnæus (*Sanguinolaria rugosa*, Lamarck, *Psammobia rugosa*, Sowerby) is there figured by Bruguière under the generic title of *Capsa*. Nearly twenty years afterwards the name was appropriated by Lamarck to distinguish two bivalves (*C. levigata* and *Brasilensis*) which belong more properly to the genus *Donax*. This misappropriation of the term *Capsa* obtained a wide circulation; it is now restored to the typical *Venus deflorata* of Linnæus, inhabiting a wide range of latitude over the Eastern seas, and to a closely allied species from Tahiti.

### Species 1. (Fig. a to f, Mus. Cuming.)

**CAPSA DEFLORATA.** *Cap. testâ oblongo-transversâ, ventricosâ, radiatim densissimè rugosa-striatâ et liratâ, liris modo tenuibus, modo validioribus, posticè semper validibus et plus minus nodoso-crenatis; albidâ, aut carneo-rosacâ, aut intensè livido-violacè, obscurè zonatâ et radiatâ, intus sæpissimè lutescente, posticè intensè purpureo-violaceo tinctâ.*

**THE DEFLOWERED CAPSA.** Shell oblong-transverse, ventricose, radiately very densely roughly striated and ridged, ridges sometimes thin, sometimes stronger, posteriorly always strong, and more or less nodosely crenated; whitish, or flesh-rose, or dark livid-violet, obscurely zoned and rayed, interior often yellowish, stained posteriorly with ~~very deep~~ purple-violet.

*Venus deflorata*, Linnæus, *Syst. Nat.* (12th edit.), p. 1133.

*Capsa deflorata*, Bruguière, Deshayes.

*Venus versicolor*, Gmelin.

*Venus purpurea*, Gmelin.

*Sanguinolaria rugosa*, Lamarck.

*Psammicola rugosa*, De Blainville.

*Psammobia rugosa*, Sowerby.

*Hab.* Eastern Seas.

The figures 1 a to 1 f in the accompanying Plate represent this well-known species in all its varieties of sculpture and colour, in different stages of growth.

### Species 2. (Mus. Cuming.)

**CAPSA TAHITENSIS.** *Cap. testâ ovato-transversâ, tenuiculâ, subventricosâ, confertissimè rugoso-liratâ, liris posticis tenuibus, elevatis, submuricato-squamatis; albâ, latere antico rotundato, postico, subobliquè quadrato, latiusculo, versus marginem compresso.*

**THE TAHITI CAPSA.** Shell ovately transverse, rather thin, somewhat ventricose, very closely roughly ridged, posterior ridges thin, raised, rather prickly-scaled; white, anterior side rounded, posterior somewhat obliquely square, rather broad, compressed towards the margin.

BERNARDI, MS. in Mus. Cuming.

*Hab.* Tahiti.

Of lighter structure than the preceding species, more delicately prickly sculptured on the posterior side, which is broader and more squarely compressed.





# MONOGRAPH

OF THE GENUS

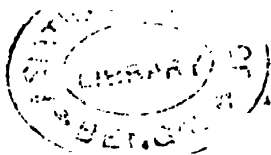
C A P S E L L A.

“Sea-girt Isles

That, like the rich and various gems, inlay

The unadorned bosom of the deep.”—*Milton's Comus*.



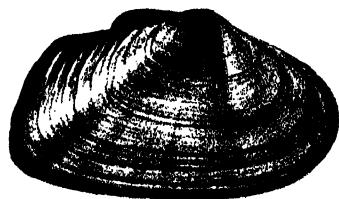
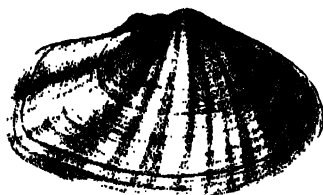




2.



3.



6.

Sowerby del et lith.



7.

Vincent Brooks imp

# CAPSELLA.

## PLATE I.

Genus CAPSELLA, Deshayes.

*Testa subelongato-transversa, plerumque æquilateralis, levigata vel concentricè striata, epidermide sæpissimè corneâ olivaceâ induta, latere antico rotundato, postico paulo angulato-truncato, angulo obtusissimo, interdum viz nullo. Cardo dente unico in valvâ sinistrâ, duobus in valvâ dextrâ, bifurcatis. Ligamentum externum, subamplum, sub callositate oblongâ internâ positum. Impressio muscularis pallii ampliter sinuosa.*

Shell rather elongately transverse, generally equilateral, smooth or concentrically striated, covered with an olive epidermis, which is mostly horny, anterior side rounded, posterior slightly angularly truncated, angle very obtuse, sometimes scarcely any. Hinge with one tooth in the left valve, two teeth in the right valve, bifurcated. Ligament external, rather large, placed upon an internal oblong callosity. Muscular impression of the mantle largely sinuous.

While lately arranging the Lamarckian family *Nymphaeacea* in the collection of Mr. Cuming, M. Deshayes set apart a characteristic series of thirteen species of shells collected in the Eastern Seas, the only one of which hitherto described was included by Lamarck in his genus *Psammobia* (*P. elongata*). The remaining twelve M. Deshayes described in the 'Proceedings of the Zoological Society' for 1854, under the title of *Capsella*, taken subgenerically as a section of the Lamarckian *Capsa*. To this genus, better known to conchologists as *Iphigenia* of Schumacher, the shells under consideration have less affinity than to *Soletellina*. They partake materially of the characters of the latter genus. The hinge scarcely differs except in the teeth being more distinct and in the posterior oblong callosity being less prominently developed, but there is a very natural assimilation of external characters. They are all of a uniform oblong-transverse growth, with the posterior side uniformly simply truncated into a faintly obtuse angle.

Twelve of the species are from the Philippine Islands. The remainder are from China, Ceylon, and the Moluccas.

Species 1. (Mus. Cuming.)

**CAPSELLA CHINENSIS.** *Caps. testâ elongato-transversâ, versus marginem compressâ, epidermide vividè luteo-castaneâ indutâ, inæquilaterali, latere antico longiore, rotundato, postico declivi-compresso, parum truncato.*

**THE CHINESE CAPSELLA.** Shell elongately transverse, compressed towards the margin, covered with a bright yellowish-chestnut epidermis, inequilateral, anterior side the longer, rounded, posterior slantingly compressed, but little truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 348.

Hab. China Seas.

Of an oblong-triangular form, compressed towards the margin, and bright yellowish-chestnut colour.

Species 2. (Mus. Cuming.)

**CAPSELLA DIFFICILIS.** *Caps. testâ elongato-transversâ, tumidulâ, tenui, æquilaterali, tenuistriatâ, epidermide lutescente-viridè indutâ, latere antico obtuso, supernè recto, postico obliquè truncato, angulum obtusissimum formante.*

**THE RUGGED CAPSELLA.** Shell elongately transverse, rather swollen, thin, equilateral, finely striated, covered with a yellowish-green epidermis, anterior side obtuse, straight at the upper part, posterior obliquely truncated, forming a very obtuse angle.

DESHAYES, Pro. Zool. Soc. 1854, p. 347.

Hab. Philippine Islands; Cuming.

Of rugged growth, covered with a little dull yellowish-green epidermis, partially eroded about the umboes.

Species 3. (Mus. Cuming.)

**CAPSELLA RUFÆ.** *Caps. testâ elongato-transversâ, tenui, compressiusculâ, subæquilaterali, arcuatâ, rugoso-striatâ, epidermide castaneo-rufâ indutâ, versus umbones erosâ, intus roseo-purpurascente, latere antico subattenuato-rotundato, postico obliquè flexuoso-truncato.*

**THE RED CAPSELLA.** Shell elongately transverse, thin, rather compressed, nearly equilateral, arched, roughly striated, covered with a chestnut-red epidermis, eroded towards the umboes, interior rose-purple, anterior side rather attenuately rounded, posterior obliquely flexuously truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 347.

Hab. Bay of Manila; Cuming.

Distinguished by a somewhat arched growth, clothed

## CAPSELLA.—PLATE I.

with a light chestnut-red epidermis, not shining, as in *C. Chinensis*.

### Species 4. (Mus. Cuming.)

**CAPSILLA ELONGATA.** *Caps. testā oblongo-transversā, compresso-convexā, subæquilaterali, irregulariter rugoso-striatā, fulvescente-albā, carneo tinctā, violaceo radiatā, latere antico declivi-rotundato, postico latè truncato, angulum subobtusum formante.*

**THE ELONGATED CAPSELLA.** Shell oblong-transverse, compressly convex, nearly equilateral, irregularly roughly striated, fulvous-white, flesh-tinged, rayed with violet, anterior side slantingly rounded, posterior broadly truncated, forming a somewhat obtuse angle.

*Psammobia elongata*, Lamarck, Anim. sans vert. vol. vi. p. 176.

*Hab.* Philippine Islands; Cuming.

This Lamarckian species of *Psammobia* may be regarded as the type of the genus under consideration, all the species of which, it will be seen, are well distinguished from the true *Psammobie*.

### Species 5. (Mus. Cuming.)

**CAPSILLA SOLIDA.** *Caps. testā elongato-transversā, versus marginem compressā, crassiusculā, irregulariter rugoso-striatā, subæquilaterali, sordidè albā, ad umbones fulvo-purpurascente, epidermide fibrosā prope marginem indutā, latere antico rotundato, postico latè truncato, angulum obtusum formante.*

**THE SOLID CAPSELLA.** Shell elongately transverse, compressed towards the margin, rather thick, irregularly roughly striated, nearly equilateral, dull white, fulvous-purple at the umbones, covered near the margin with a fibrous epidermis, anterior side rounded, posterior broadly truncated, forming an obtuse angle.

*Hab.* Malacca.

Of solid roughly striated growth and compressly oblong-square form, tinged with fulvous-purple.

### Species 6. (Mus. Cuming.)

**CAPSILLA VIOLACEA.** *Caps. testā elongato-transversā, gibbosiusculā, inæquilaterali, tenuistriatā, intensè purpureo-violaceā, epidermide fibrosā prope marginem indutā, latere antico breviorè, subattenuato-rotundato, postico latè obliquè truncato, angulum obtusissimum formante.*

**THE VIOLET CAPSELLA.** Shell elongately transverse, rather gibbous, inequilateral, finely striated, deep purple-violet, covered with a fibrous epidermis near the margin, anterior side the shorter, rather attenuately rounded, posterior broadly obliquely truncated, forming a very obtuse angle.

*Hab.* Bay of Manila; Cuming.

A rather solid gibbous shell, of a characteristic deep purple-violet colour, covered near the margin with a very decided fibrous epidermis.

### Species 7. (Mus. Cuming.)

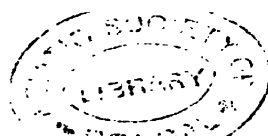
**CAPSILLA RADIATA.** *Caps. testā elongato-transversā, subangustā, posticè gibbosā, subæquilaterali, tenui, subtilissimè striatā, flavescènte-roseā, translucidā, umbonibus vivide roseis, latere antico attenuato-rotundato, postico subampliter obliquè truncato.*

**THE RAYED CAPSELLA.** Shell elongately transverse, rather narrow, gibbous posteriorly, nearly equilateral, thin, very finely striated, yellowish-rose, translucent, umbones deep rose, anterior side attenuately rounded, posterior side rather largely obliquely truncated.

DESIHAYES, Pro. Zool. Soc. 1854, p. 348.

*Hab.* Orion, Bay of Manila; Cuming.

An extremely delicate semi-transparent rose-tinted shell, much more largely angularly developed on the posterior than on the anterior side.







8a.



9.



10.



8b.



11.



12.



13.



15.



# CAPSELLA.

## PLATE II.

Species 8. (Fig. *a, b*, Mus. Cuming.)

**CAPSELLA CRASSULA.** *Caps. testā ovato-transversā, subtriangulārī, æquilaterālī, transversim inæqualiter striato-sulcatā, epidermide olivaceo-fuscā indutā, ad umbones erosā, latere antico obtuso, semielliptico, postico latè truncato, flexurā obliquā bipartitā.*

**THE THICK CAPSELLA.** Shell ovately transverse, subtriangular, equilateral, transversely unequally striately grooved, covered with an olive-brown epidermis, eroded at the umbones, anterior side obtuse, semi-elliptic, posterior broadly truncated, divided by an oblique flexure.

DESHAYES, Pro. Zool. Soc. 1854, p. 349.

*Hab.* Philippine Islands.

Of an oblong subtriangular form, covered with a dark olive-brown epidermis, which is much eroded about the umbones.

Species 9. (Mus. Cuming.)

**CAPSELLA MINOR.** *Caps. testā ovato-transversā, compressā, tenui, subæquilaterālī, irregulariter striato-sulcatā, epidermide flavescēte vestitā, violaceā, obscurè radiatā, latere antico obtuso, parum attenuato, superne convexiusculo, declivi, postico angustiore, attenuato, subtruncato, flexurā vix manifestā bipartitā.*

**THE LESSER CAPSELLA.** Shell ovately transverse, compressed, thin, nearly equilateral, irregularly striately grooved, clothed with a yellowish epidermis, violet, obscurely rayed, anterior side obtuse, but little attenuated, rather convex and slanting at the upper part, posterior side narrower, attenuated, slightly truncated, divided by a scarcely perceptible flexure.

DESHAYES, Pro. Zool. Soc. 1854, p. 347.

*Hab.* Bay of Manila; Cuming.

A compressed violet-tinged species, somewhat flexuously attenuated on the posterior side.

Species 10. (Mus. Cuming.)

**CAPSELLA VIRESCENS.** *Caps. testā elongato-transversā, tenui, subæquilaterālī, levigatā, albidā, versus umbones rosaceā, nigro radiatim strigatā et trigonomaculatā, epidermide nitente olivaceo-viridi indutā, lateribus rotundatis, postico subflexuoso-truncato.*

**THE GREEN CAPSELLA.** Shell elongately transverse, thin,

nearly equilateral, smooth, whitish, rose-tinted towards the umbones, radiately streaked and triangularly marked with black, covered with a shining olive-green epidermis, sides rounded, posterior slightly flexuously truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 349.

*Hab.* — ?

A rather thin shell, of a light watery olive-green colour, tinged with rose towards the umbones, and obscurely marked with triangular black marks and rays.

Species 11. (Mus. Cuming.)

**CAPSELLA SOLENELLA.** *Caps. testā elongato-transversā, ellipticā, tumidulā, subæquilaterālī, tennistriatā, epidermide olivaceā indutā, versus umbones purpureā, latere antico attenuato-rotundato, postico quadrato-truncato, gibboso, angulum obtusum formante.*

**THE LITTLE SOLEN CAPSELLA.** Shell elongately transverse, elliptic, rather swollen, nearly equilateral, finely striated, covered with an olive epidermis, purple towards the umbones, anterior side attenuately rounded, posterior side quadrately truncated, gibbous, forming an obtuse angle.

DESHAYES, Pro. Zool. Soc. 1854, p. 350.

*Hab.* Bay of Manila; Cuming.

Chiefly distinguished by the more gibbous proportions of the posterior end, which forms an obtuse angle.

Species 12. (Mus. Cuming.)

**CAPSELLA LUNULATA.** *Caps. testā elongato-transversā, subtrigonā, æquilaterālī, tenui, translucidā, levi, epidermide nitente olivaceo-corneā indutā, griseo-nigricante obscurè radiatā, margine superiore utroque latere æqualiter declivi, latere antico rotundato, superne angustè lunulato, postico obliquè obtusè truncato, angustato.*

**THE LUNULED CAPSELLA.** Shell elongately transverse, somewhat triangular, equilateral, thin, translucent, smooth, covered with a shining olive horny epidermis, obscurely rayed with greyish-black, upper margin on each side equally slanting, anterior side rounded, narrowly lunuled above, posterior obliquely and obtusely truncated and narrowed.

DESHAYES, Pro. Zool. Soc. 1854, p. 349.

## CAPSELLA.—PLATE II.

*Hab.* Philippine Islands; Cuming.

Of a delicate transparent horny aspect, though solid, faintly rayed, distinguished by a narrow lunule, which in other species of the genus is either wanting or but slightly indicated.

### Species 13. (Mus. Cuming.)

**CAPSĒLLA CANDIDA.** *Caps. testā elongato-transversā, solidulā, gibbosā, subæquilateralī, densè tenuistriatā, albā, epidermide tenui fibrosā versus marginem indutā, latere antico rotundato, postico paulo longiore, subquadrato-truncato, angulum obtusum formante.*

**THE WHITE CAPSELLA.** Shell elongately transverse, rather solid, gibbous, nearly equilateral, densely finely striated, white, covered towards the margins with a slight fibrous epidermis, anterior side rounded, posterior rather the longer, subquadrately truncated, forming an obtuse angle.

*Hab.* Philippine Islands; Cuming.

A white squarely elongated species, of solid gibbous growth, covered towards the margin with a slight deciduous fibrous epidermis.

### Species 14. (Mus. Cuming.)

**CAPSĒLLA TENUIS.** *Caps. testā elongato-transversā, convexiusculā, subæquilateralī, tenui, striato-sulcatā, epidermide corneā nilente indutā, ad umbones suberosā, lateribus rotundatis, postico subcompresso.*

**THE THIN CAPSELLA.** Shell elongately transverse, rather convex, nearly equilateral, thin, striately grooved, covered with a shining horny epidermis, slightly eroded at the umboes, sides rounded, the posterior rather compressed.

*DESHAYES, Pro. Zool. Soc. 1854, p. 349.*

*Hab.* Philippine Islands; Cuming.

Of a rather simple elongated form, with the sides almost equally rounded.

### Species 15. (Mus. Cuming.)

**CAPSĒLLA ROSACEA.** *Caps. testā elongato-transversā, depressiusculā, tenui, subæquilateralī, tenuistriatā, epidermide rosaceo-stramineā indutā, violaceo pauciradiatā, latere antico rotundato, postico sublongiore, oblique compresso-truncato.*

**THE ROSE-TINTED CAPSELLA.** Shell elongately transverse, rather depressed, thin, nearly equilateral, finely striated, covered with a rose-tinted straw-coloured epidermis, with a few violet rays, anterior side rounded, posterior rather the longer, obliquely compressly truncated.

*DESHAYES, Pro. Zool. Soc. 1854, p. 348.*

*Hab.* Philippine Islands.

Chiefly distinguished by its light rose-tinged straw-colour, sparingly rayed with violet.

### Species 16. (Mus. Cuming.)

**CAPSĒLLA LAYARDI.** *Caps. testā ovato-transversā, tenui, fragili, convexiusculā, subæquilateralī, irregulariter striato-sulcatā, epidermide nilente olivaceo-corneā indutā, obscure purpureo radiatā, lateribus obtusè rotundatis, ab umbonibus declivibus.*

**LAYARD'S CAPSELLA.** Shell ovately transverse, thin, fragile, rather convex, nearly equilateral, irregularly striately grooved, covered with a shining olive-horny epidermis, faintly purple-rayed, sides obtusely rounded, sloping from the umboes.

*DESHAYES, Pro. Zool. Soc. 1854, p. 148.*

*Hab.* Ceylon; E. F. Layard.

A shell of very light structure, covered with a shining horny epidermis, rayed with purple, which is best seen in the interior.

## C A P S E L L A.

<i>candida, Reeve</i> . . . . .	11.	13	<i>radiata, Deshayes</i> . . . . .	1.	7
<i>Chinensis, Deshayes</i> . . . . .	1.	1	<i>rosacca, Deshayes</i> . . . . .	11.	15
<i>crassula, Deshayes</i> . . . . .	11.	8	<i>rufa, Deshayes</i> . . . . .	1.	3
<i>difficilis, Deshayes</i> . . . . .	1.	2	<i>solenella, Deshayes</i> . . . . .	11.	11
<i>elongata (Psammobia), Lam.</i> . .	1.	4	<i>solida, Reeve</i> . . . . .	1.	5
<i>Hayardi, Deshayes</i> . . . . .	11.	16	<i>tenuis, Deshayes</i> . . . . .	11.	14
<i>lunulata, Deshayes</i> . . . . .	11.	12	<i>virescens, Deshayes</i> . . . . .	11.	10
<i>minor, Deshayes</i> . . . . .	11.	9	<i>violacea, Reeve</i> . . . . .	1.	6



MONOGRAPH  
OF THE GENUS  
S A N G U I N O L A R I A.

“ In hollow of the tide-worn reef,  
Left at low water glistening in the sun,  
Pellucid pools, and rocks in miniature,  
With their small fry of fishes, crusted shells,  
Rich mosses, tree-like seaweed, sparkling pebble:  
Enchant the eyes, and tempt the eager hand  
To violate the fairy paradise.”—*Montgomery*.





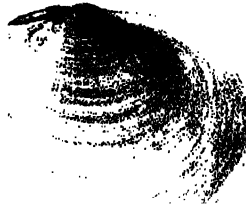




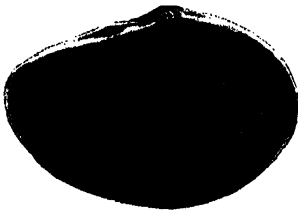
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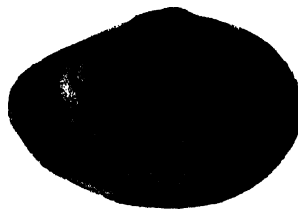
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5a.



5b.



5c.

# SANGUINOLARIA

## PLATE I.

Genus SANGUINOLARIA, Lamarck.

*Testa ovato-transversa, convexiuscula, sæpè pellucida, inæquilateralis, tenuissimè concentricè striata, plerumque plus minus sanguineo-rosea, latere antico rotundato, postico plus minus attenuato-producto, impressione flexuosa ab umbonibus ad marginem radiante. Cardio dentibus duobus parvis erectis subfistulis approximalis in utràque valvâ. Impressio muscularis pallii sinu trigono latè ventrali.*

Shell ovately transverse, rather convex, mostly transparent, inequilateral, very finely concentrically striated, generally more or less blood-rose, anterior side rounded, posterior more or less attenuately produced, with a flexuous impression radiating from the umboes to the margin. Hinge with two small erect sub-bifid teeth, approximating, in each valve. Muscular impression of the mantle with a broadly ventral triangular sinus.

Of the two species which Lamarck included under this generic head only one, *Sanguinolaria rosea* (*Solen sanguinolentus*, Gmelin), remains. To this are added in the accompanying Plate four other species of characteristic typical resemblance, one described by Mr. Arthur Adams in the 'Proceedings of the Zoological Society' for 1849, two described by M. Deshayes in the same journal for 1854, and one which is apparently new. They differ little from each other in form or texture; and the colouring, where any exists, though of a different intensity in each species, is of the same uniform tone. The anterior side of the shell in each species is regularly rounded, and the posterior more or less attenuated or beaked, and characterized by a faint depression radiating across the posterior area from the umbo on each side to the margin.

The habitats of the species, so far as they are known, are Ceylon, Central America, and California.

### Species 1. (Mus. Cuming.)

**SANGUINOLARIA VITREA.** *Sang. testâ ovato-transversâ, convexiusculâ, inæquilaterali, tenui, candidâ, vitreâ, tenuissimè et irregulariter striatâ, latere antico breviorè, circulari, postico supernè recto, viz declivi, extremitate angustato, margine inferiore valdè convexo.*

**THE GLASSY SANGUINOLARIA.** Shell ovately transverse, rather convex, inequilateral, thin, white, glassy, very finely and irregularly striated, anterior side shorter,

circular, posterior straight at the upper part, a little sloping, narrowed at the extremity, lower margin very convex.

DESHAYES, Pro. Zool. Soc. 1854, p. 326.  
*Hab.* — ?

This shell is of rather firm texture, though perfectly transparent, without any tinge of the delicate sanguineous rose-colour which characterizes the other species of the genus.

### Species 2. (Mus. Cuming.)

**SANGUINOLARIA OVALIS.** *Sang. testâ ovato-transversâ, convexiusculâ, subæquilaterali, tenui, minutissimè decussatim striatâ, albidâ, purpureo-roseo dilutè tinctâ, latere antico latè rotundato, postico subobtusè attenuato, margine inferiori convexo.*

**THE OVAL SANGUINOLARIA.** Shell ovately transverse, rather convex, nearly equilateral, thin, very minutely decussately striated, whitish, dilutely tinged with purple-rose, anterior side broadly rounded, posterior side rather obtusely attenuated, lower margin convex.

*Hab.* Central America.

This little species is chiefly distinguished by its convex swollen growth about the umboes.

### Species 3. (Mus. Cuming.)

**SANGUINOLARIA TELLINOIDES.** *Sang. testâ subangustè transversâ, inæquilaterali, tenuiculâ, minutè decussatim striatâ, intensè pellucido-roseâ, latere antico latiore, rotundato, postico ab umbonibus flexuoso-impresso, ad extremitatem attenuato-rostrato.*

**THE TELLINA-LIKE SANGUINOLARIA.** Shell rather narrowly transverse, inequilateral, rather thin, minutely decussately striated, deep transparent rose, anterior side broader, rounded, posterior flexuously impressed from the umboes, attenuately beaked at the extremity.

ADAMS, Pro. Zool. Soc. 1849, p. 170. pl. 6. f. 6.  
*Hab.* Gulf of California.

A pretty transparent rose-coloured species, with a flexuous depression sloping from the umbo to the margin on the posterior side, which is somewhat attenuately beaked at the extremity.

# SANGUINOLARIA.—PLATE I.

## Species 4. (Mus. Cuming.)

SANGUINOLARIA SANGUINOLENTA. *Sang. testā ovato-transversā, solidiusculā, inaequaliterali, convexiusculā, decussatim striatā, albā, circa umbones rosaceā, latere antico rotundato, acuminato-producto, ab umbonibus flexuoso-impresso.*

THE BLOOD-STAINED SANGUINOLARIA. Shell ovately transverse, rather solid, inequilateral, rather convex, decussately striated, white, tinged with rose around the umboes, anterior side rounded, posterior side acuminate produced, flexuously impressed from the umboes.

Gmelin, Syst. Nat. 13th edit. p. 3227.

*Solen sanguinolentus*, Dillwyn.

*Sanguinolaria sanguinolenta*, Deshayes.

*Tellina rosea*, Gmelin.

*Sanguinolaria rosea*, Sowderby.

*Psammobia rosea*, Deshayes.

*Hab.* Ceylon.

This fine species, the original type of the genus, well figured by Lister and Chemnitz, is of a rather solid clear

opaque-white texture, merely tinged with rose around the umboes.

## Species 5. (Mus. Cuming.)

SANGUINOLARIA PURPUREA. *Sang. testā ovato-transversā, tenui, fragili, pellucidā, plano-convexā, inaequaliterali, transversim densè striatā, intus intensè nitente sanguineo-purpureā, latere antico rotundato, postico regulariter attenuato-rotundato.*

THE PURPLE SANGUINOLARIA. Shell ovately transverse, thin, fragile, transparent, flatly convex, inequilateral, transversely closely striated, interior deep shining blood-purple, anterior side rounded, posterior regularly attenuately rounded.

DESHAYES, Pro. Zool. Soc. 1854, p. 346.

*Hab.* — ?

The form of this species is very similar to that of the preceding, but it is of semitransparent texture, mostly deeply coloured from the interior throughout with shining blood-purple.

# MONOGRAPH

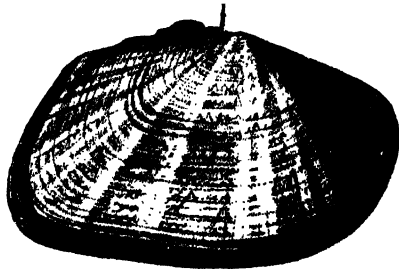
OF THE GENUS

P S A M M O B I A.

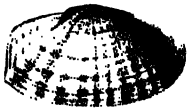
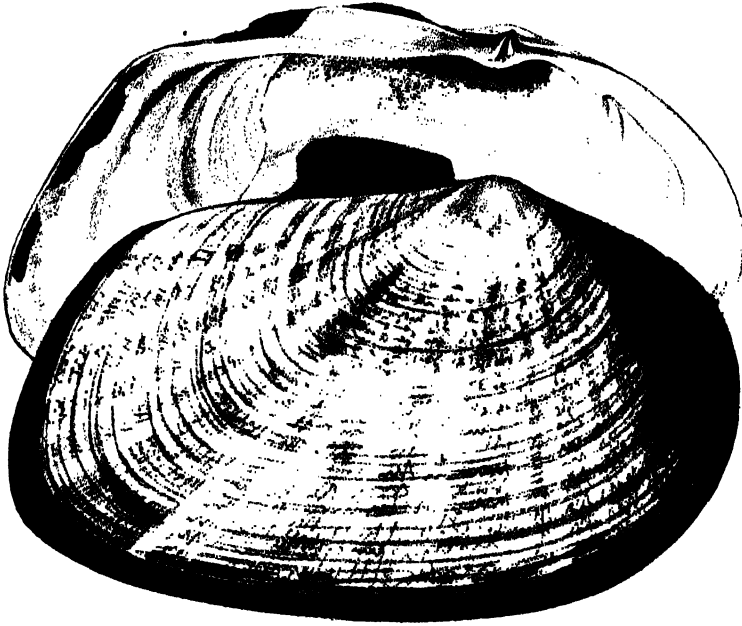
I took it for a fairy vision  
Of some gay creatures of the element,  
That in the colours of the rainbow live,  
And play in the plighted clouds."—*Milton's Cor*







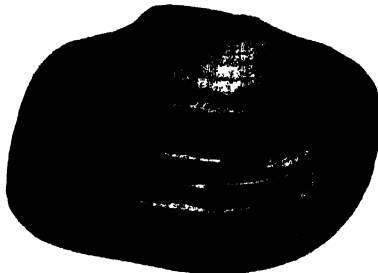
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Sowerby del. & lith.

Vincent Brooks Imp.

# PSAMMOBIA.

## PLATE I.

Genus PSAMMOBIA, Lamarck.

*Testa transversa, oblonga vel elongato-ovata, ad latera paulo hians, laevigata vel concentricè striata, scissimè inequilateralis, latere antico rotundato, postico plus minus flexuoso-angulato et truncato, interdum pulcherrimè sculpto; colore vario, interdum cum epidermide olivacea. Cardo in valvâ alterâ dentibus duobus, plerumque bifidis, in alterâ unico, ligamento externo. Impressio muscularis pallii sinu maximo.*

Shell transverse, oblong or elongately ovate, a little gaping at the sides, smooth or concentrically striated, mostly inequilateral, the anterior side rounded, the posterior more or less flexuously angled and truncated, sometimes very beautifully sculptured; colour various, sometimes with an olive epidermis. Hinge in one valve with two teeth, generally bifid, in the other with one tooth, the ligament being external. Muscular impression of the mantle with a very large sinus.

In a recent investigation of the genera ranging in the system between *Solen* and *Tellina*, M. Deshayes referred to the Lamarckian genus *Psammobia*, a beautiful series of undescribed species in the collection of Mr. Cuming that had not hitherto found a resting-place, and displaced one or two, as, for example, the *Caprea rugosa*, that had been referred to this genus in error. By far the most characteristic forms of the group are those which were so described, and are here for the first time figured. They present a strong generic peculiarity in the flexuous angular development of the posterior angle, which in most species is elaborately sculptured with wrinkled ridges, and are remarkable for their display of delicate colours, generally of a rosy hue.

The *Psammobias* are, with one or two abnormal exceptions, confined to the Eastern Hemisphere, the genus being well represented on our own shores by the common *P. Ferroensis*, and ranging as far south as Tasmania.

### Species 1. (Mus. Cuming.)

**PSAMMOBIA ORIENS.** *Psam. testâ ovato-transversâ, subquadratâ, solidulâ, inequilateralî, transversim substriatâ, in latere postico inequaliter sulcatâ; carneo-roseâ, radiis et lineis angulatis roseo-purpurescentibus notatâ, latere antico breviorè, latè obtuso, postico obliquè truncato.*

**THE RISING-SUN PSAMMOBIA.** Shell ovately transverse, somewhat square, rather solid, inequilateral, transversely finely striated, unequally grooved on the posterior side; flesh-rose, marked with rose-purple rays and angular lines, anterior side shorter, broadly obtuse, posterior obliquely truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 318.

*Hab.* Japan.

Of the same typical character as *P. maxima*, more equi-valve and square-built, delicately rayed, and elegantly mottled with violet triangular marks.

### Species 2. (Mus. Cuming.)

**PSAMMOBIA PUELLA.** *Psam. testâ elongato-transversâ, tenui, depressâ, inequilateralî, transversim striatâ, striis in latere postico rugiformibus; nilente-albâ, aurantio-rufo pallidè radiatâ, umbonibus nilente-violeceis; latere antico longiorè, rotundato, postico brevî, obtusè angulato.*

**THE TENDER PSAMMOBIA.** Shell elongately transverse, thin, depressed, inequilateral, transversely striated, striae on the posterior side wrinkle-like; shining white, faintly rayed with orange-red, umbones shining violet; anterior side the longer, rounded, posterior short, obtusely angled.

DESHAYES, Pro. Zool. Soc. 1854, p. 320.

*Hab.* Australia.

Bluish-white, shining, faintly rayed with orange-red, neatly sculptured on each side with raised striae.

### Species 3. (Mus. Cuming.)

**PSAMMOBIA MODESTA.** *Psam. testâ elongato-transversâ, convexiusculâ, subaequilateralî, medio substriatâ; albidâ, pallidè rufescente sparsim radiatâ; latere antico rotundato, postico subangulato.*

**THE MODEST PSAMMOBIA.** Shell elongately transverse, rather convex, nearly equilateral, faintly striated in the middle; whitish, sparsely rayed with faint red; anterior side rounded, posterior slightly angulated.

DESHAYES, Pro. Zool. Soc. 1854, p. 319.

*Hab.* Australia.

More convex and less angularly formed than the preceding species.



# PSAMMOBIA.—PLATE I.

## Species 4. (Mus. Cuming.)

**PSAMMOBIA MAXIMA.** *Psam. testā ovato-transversā, compressiusculā, solidā, valdē inequilaterali, rudē concentricē lirata et striatā, liris posticē subundulatis; lutescente-albā, radiis carneo-roseis lineisque angularibus notatā; lateribus rotundatis, postico subobliquē truncato.*

**THE VERY LARGE PSAMMOBIA.** Shell ovately transverse, rather compressed, solid, very inequilateral, rudely concentrically ridged and striated, ridges slightly waved on the posterior side; yellowish-white, marked with faint flesh-rose rays and angular lines, sides rounded, the posterior somewhat obliquely truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 317.

*Hab.* Panama.

A very solid roughly-formed shell, of brownish chalk substance, mottled throughout with faint-red triangular marks.

## Species 5. (Mus. Cuming.)

**PSAMMOBIA ANOMALA.** *Psam. testā elongato-transversā, tenui, fragili, tumidulā, subæquilateralī, transversim obliquē minutē striatā, striis ad latera evanidis; lutescente-carneā, prope umbonem aurantio tinctā; latere antico paulo attenuato, postico sublatē angulato.*

**THE ANOMALOUS PSAMMOBIA.** Shell elongately transverse, thin, fragile, rather swollen, nearly equilateral, transversely obliquely minutely striated, striæ disappearing at the sides; yellowish flesh-colour, tinged with orange near the umbo; anterior side a little attenuated, posterior rather broadly angled.

DESHAYES, Pro. Zool. Soc. 1854, p. 320.

*Hab.* Brisbane Water, east coast of New Holland; Strange.

A delicate orange-tinted shell, having the posterior angle rather concavely impressed.

## Species 6. (Mus. Cuming.)

**PSAMMOBIA TELLINELLA.** *Psam. testā elongato-transversā, subæquilateralī, levigatā; sordidē carneo-albā, rufō tinctā et interruptē radiatā, umbonibus vividē rufō biradiatā.*

**THE LITTLE TELLÉN PSAMMOBIA.** Shell elongately transverse, nearly equilateral, smooth; dull flesh-white, tinged and interruptedly rayed with red, umbones two-rayed with deep scarlet.

LAMARCK, Anim. sans vert. vol. vi. p. 177.

*Psammobia florida*, Turton.

*Hab.* Britain.

A pretty orange-tinted simply convex shell, with two small bright pink rays darting from the umbones.

## Species 7. (Mus. Cuming.)

**PSAMMOBIA LATA.** *Psam. testā ovato-transversā, latā, depressā, solidā, inequilateralī, inequaliter transversim striatā; purpurascente, epidermide lutescente-olivaceā indutā; lateribus subtruncato-rotundatis.*

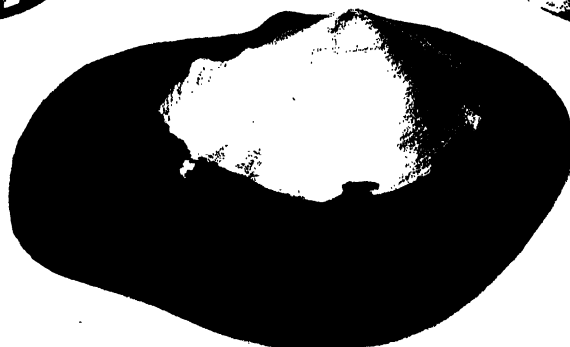
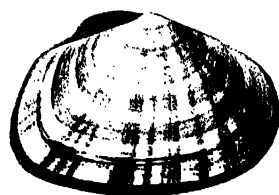
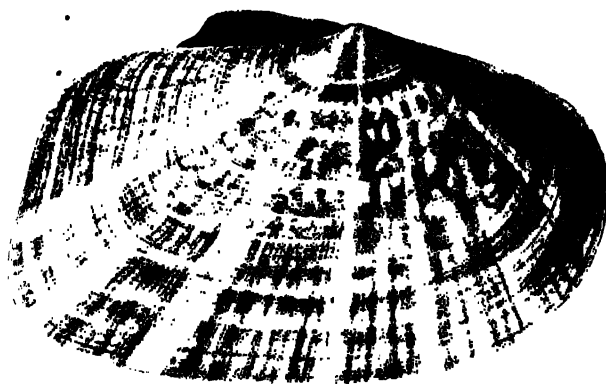
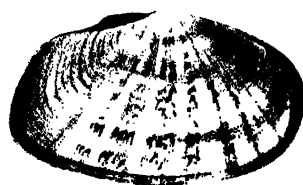
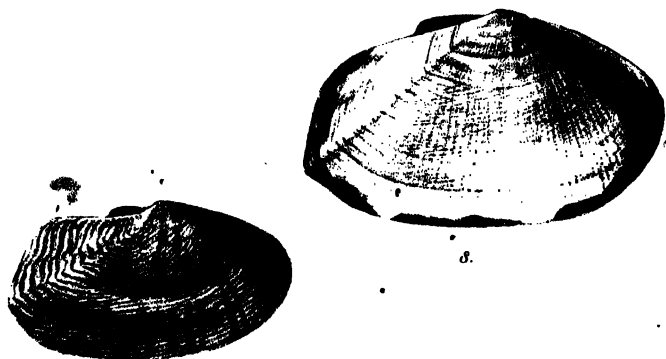
**THE BROAD PSAMMOBIA.** Shell ovately transverse, broad, depressed, solid, inequilateral, unequally transversely striated; purplish, covered with a yellowish-olive epidermis; sides somewhat truncately rounded.

DESHAYES, Pro. Zool. Soc. 1854, p. 318.

*Hab.* St. Elena, West Columbia; Cuming.

A broad square shell, almost entirely enveloped in a skin-like yellowish-olive epidermis.





# PSAMMOBIA.

## PLATE II.

### Species 8. (Mus. Cuming.)

PSAMMOBIA LESSONI. *Psam. testā oblongo-transversā, depressiusculā, radiatim irregulariter minute striatā, striis elevatis obliquis decussatā, livido-carnēā, ferrugineo tinctā, nitente, latere antico subattenuatē rotundato, postico subtruncato, ab umbone concavo-angulato.*

LESSON'S PSAMMOBIA. Shell oblong-transverse, rather depressed, radiately irregularly minutely striated, decussated with oblique raised striæ, livid-blue, rust-tinged, shining, anterior side somewhat attenuately rounded, posterior slightly truncated, concavely angled from the umbo.

DE BLAINVILLE, Deshayes, MS., in Mus. Cuming.

Hab. Island of Samar, Philippines; Cuming.

A compressed shell, characterized by a concave angular slope on the posterior side, the entire surface of the shell being of a bright livid rust-tinged blue, rayed with hair-lines, crossed obliquely with raised striae.

### Species 9. (Mus. Cuming.)

PSAMMOBIA CORRUGATA. *Psam. testā ovato-transversā, convexiusculā, inequilateralī; rubro-violaceā, albo irregulariter maculatā, et rubro-violaceo saturatiore subradiatā, transversim obliquē densē striatā, in latere postico latē et irregulariter rugosā, rugis cum striis continuīs, latere antico breviorē, latē rotundato, postico parum dilatato, supernē recto.*

THE WRINKLED PSAMMOBIA. Shell ovately transverse, rather convex, inequilateral; reddish-violet, irregularly spotted with white, and faintly rayed with darker reddish-violet, transversely obliquely densely striated, broadly and irregularly wrinkled on the posterior side, wrinkles continuous with the striæ, anterior side the shorter, broadly rounded, posterior a little dilated, straight at the upper part.

DESHAYES, Pro. Zool. Soc. 1854, p. 324.

Hab. Island of Zebu, Philippines; Cuming.

A delicate reddish-violet mottled shell, with waved striae passing obliquely across the valve to the posterior side, where they enlarge into ripple-like wrinkles.

### Species 10. (Mus. Cuming.)

PSAMMOBIA GRATA. *Psam. testā ovato-transversā, sub-*

*quilateralī, solidulā, tumidulā, anticē obtusā, breviorē, posticē subtruncatā, transversim obsoletē striatā; albā, pallidē violaceo multiradiatā, radiis albo maculatis, lineolīs longitudinalibus irregularibus notatis, intus albā.*

THE COMELY PSAMMOBIA. Shell ovately transverse, nearly equilateral, rather solid, rather swollen, anteriorly obtuse, shorter, posteriorly slightly truncated, transversely obsoletely striated; white, many-rayed with pale violet, rays spotted with white, and marked with irregular longitudinal lines, interior white.

DESHAYES, Pro. Zool. Soc. 1854, p. 318.

Hab. Amboyna.

Of smooth, rather swollen aspect, delicately rayed on a bluish-white ground, with interrupted violet-red pencilled rays.

### Species 11. (Mus. Cuming.)

PSAMMOBIA OCCIDENS. *Psam. testā oblongo-transversā, subellipticā, densē concentricē striatā, livido-roseo albogue radiatā et maculatā, latere postico longiorē, obliquē latē truncato, subcompresso, antico rotundato.*

THE SUN-SET PSAMMOBIA. Shell oblong-transverse, subelliptic, densely concentrically striated, rayed and spotted with vivid rose and white, posterior side the longer, obliquely broadly truncated, rather compressed, anterior rounded.

*Solen occidens*, Chemnitz, Conch. Cab. vol. vi. p. 74. pl. 7. f. 61.

*Sanguinolaria occidens*, De Blainville.

*Psammobia occidens*, Deshayes.

Hab. Ceylon.

This beautifully painted and well-known species differs materially in generic character from the type of the genus *Sanguinolaria*, *S. rosea*, and is referred by M. Deshayes to the genus under consideration.

### Species 12. (Mus. Cuming.)

PSAMMOBIA STANGERI. *Psam. testā ovato-transversā, solidulā, subaequilateralī, albidā, pallidē violaceo multiradiatā, lateralibus supernē subdeclivibus, deinde rotundatis, postico breviorē, viz truncato.*

STANGER'S PSAMMOBIA. Shell ovately transverse, rather

PSAMMOBIA.—PLATE II.

solid, nearly equilateral, whitish, many-rayed with pale violet, sides gently slanting at the upper part, then rounded, posterior side the shorter, scarcely truncated.

GRAY, Dieffenbach's Travels in New Zealand; Fauna, p. 253.

*Hab.* New Zealand; Strange.

A rather solid shell, with the sides gently sloping from the umboes, and nearly equally rounded. The painting appears in faint violet rays throughout upon a dull stone-white ground.

Species 13. (Mus. Cuming.)

PSAMMOBIA TRISTIS. *Psam. testā ovato-transversa, depressiusculā, solidulā, subaequilaterali, transversim inequaliter substriatā, albo-griseā, obscurè violaceo radiatā, intus pallidè violaceā, latere antico paulo longiore, lateribus superne declivibus, antico latè obtuso, postico latè obtusè truncato, subangulato.*

THE SAD PSAMMOBIA. Shell ovately transverse, rather depressed, rather solid, nearly equilateral, transversely unequally finely striated, whitish-grey, obscurely violet-rayed, pale violet within, anterior side a little the longer, sides slanting at the upper part, anterior broadly obtuse, posterior broadly obtusely truncated, slightly angled.

DESHAYES, Pro. Zool. Soc. 1854, p. 318.

*Hab.* Amboyna.

Painted with very obscure violet rays, with a thin deciduous epidermis more or less remaining along the margin of the shell.

Species 14. (Mus. Cuming.)

PSAMMOBIA TOGATA. *Psam. testā ovato-transversā, tumidulā, inequilaterali, extremitatibus sensim attenuatā, attamen antice rotundatā et breviorē, posticè obliquè truncatā, epidermide fusco-rubente, margines superante, relictā, ad umboes deciduā vel erosā, calvis intus exlusque albis.*

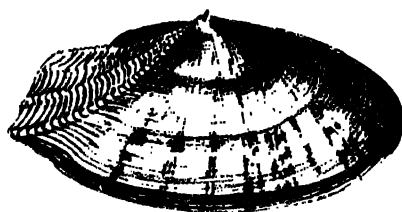
THE CLOTHED PSAMMOBIA. Shell ovately transverse, rather swollen, inequilateral, gradually attenuated at the extremities, but rounded and shorter anteriorly, and obliquely truncated posteriorly, clothed with a brownish-green epidermis passing over the margins, deciduous or eroded at the umboes, valves within and without white.

DESHAYES, Pro. Zool. Soc. 1854, p. 318.

*Hab.* Port Essington, Australia; Jukes. Bay of Manilla. Philippines; Cuming.

Of quite a different typical character from any of the preceding species, the shell being of a rough opaque texture, attenuated towards the extremities, covered with a thick fibrous epidermis.

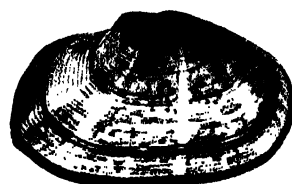




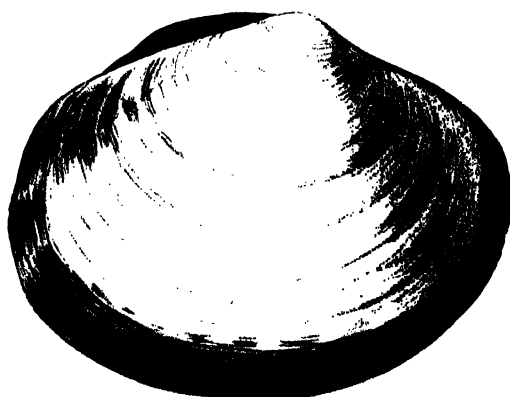
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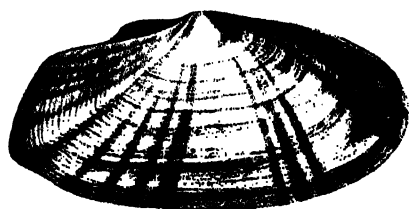
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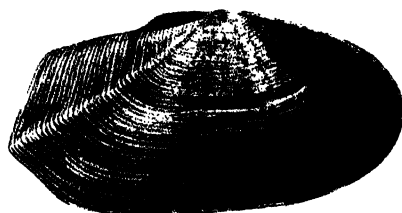
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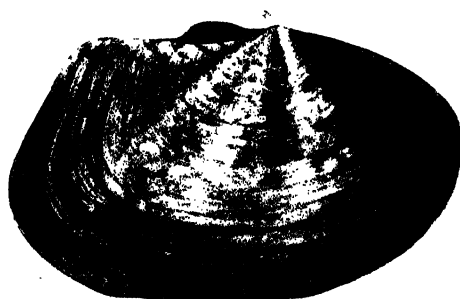
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# PSAMMOBIA.

## PLATE III.

### Species 15. (Mus. Cuming.)

**PSAMMOBIA INSIGNIS.** *Psam. testâ elongato-transversa, compressâ, subæquilaterali, solidiusculâ, violaceo-rubrescente, rubro-purpureascente pauci-radiatâ, radiis maculis irregularibus interruptis, transversim tenuè sulcato-striatâ, striis ad umbones tenuibus, cæcis marginibus crassioribus et profundioribus, latere antico semi-elliptico, obtuso, superne inferneque equaliter convexo, latere postico superne recto, paulatim declivi, angulo concavo bipartito.*

**THE REMARKABLE PSAMMOBIA.** Shell elongately transverse, compressed, nearly equilateral, rather solid, violet-red, sparsely rayed with reddish-purple, ray interrupted with regular spots, transversely finely groove-striated, striae fine at the umbones, thicker and deeper towards the margins, anterior side semi-elliptic, obtuse, equally convex above and below, posterior side straight at the upper part, a little slanting, with a bipartite concave angle.

DESHAYES, Pro. Zool. Soc. 1854, p. 322.

*Hab.* Moluccas.

Rather elongate in form, with the posterior end produced into a bipartite concavely angled beak, with the striae raised upon it in concentric wrinkles.

### Species 16. (Mus. Cuming.)

**PSAMMOBIA PRÆSTANS.** *Psam. testâ elongato-transversa, convexiusculâ, tenui, inæquilaterali, intrinse violaceo, albo nitide floccatâ, transversim et obliquè nitide regulariter striatâ, ad latus posticum striis subito interruptis, latere antico brevior, superne convexiusculo, obtuso, latere postico latiore, angulo obtuso obliquo.*

**THE SURPASSING PSAMMOBIA.** Shell elongately transverse, rather convex, thin, inequilateral, deep violet, neatly flaked with white, transversely and obliquely minutely regularly striated, striae suddenly interrupted on the posterior side, anterior side shorter, rather convex and obtuse at the upper part, posterior side broader, with an obtuse oblique angle.

DESHAYES, Pro. Zool. Soc. 1854, p. 322.

*Hab.* Moluccas.

Very characteristic in its style of colouring, which varies from rose-purple to very deep violet, prettily flaked with white.

### Species 17. (Mus. Cuming.)

**PSAMMOBIA VESPERTINA.** *Psam. testâ ovato-transversa, tumidiusculâ, subæquilaterali, lævi, nitente, transversim striato-sulcatâ, striis ad latus posticum confertioribus, rufescente et carulco-purpureâ, albo floccatâ et triradiatâ, extremitatibus rotundatis.*

**THE EVENING PSAMMOBIA.** Shell ovately transverse, slightly swollen, nearly equilateral, smooth, shining, transversely striately grooved, striae on the posterior side closer, reddish and blue-purple, flaked and three-rayed with white, extremities rounded.

*Solen vespertinus*, Gmelin, Syst. Nat. p. 3228.

*Lux vespertina*, Chemnitz.

*Tellina depressa*, Pennant.

*Tellina variabilis*, Pulteney.

*Tellina albidâ*, Dillwyn.

*Psammobia vespertina*, Lamarck.

*Psammobia florida*, Lamarck.

*Sanguinolaria vespertina*, Fleming.

*Psammocula vespertina*'s, De Blainville.

*Hab.* Mediterranean.

This well-known species is mostly flaked and three-rayed with white upon a deep purple-blue rust-tinged ground.

### Species 18. (Mus. Cuming.)

**PSAMMOBIA SOLIDA.** *Psam. testâ latè ovato-transversa, gibbosâ, inæquilaterali, lateribus ad umbones declivibus, extremitatibus rotundatis; sordide albâ, concentricè rugoso-striatâ, prope margines epidermide vestitâ.*

**THE SOLID PSAMMOBIA.** Shell broadly ovately transverse, gibbous, inequilateral, sides sloping from the umbones, rounded at the extremities; dead-white, concentrically roughly striated, covered near the margins with an epidermis.

GRAY, MS., Brit. Mus.

*Hab.* Chili; Cuming.

A roughly-striated gibbous dead-white *Mya*-like species, covered towards the margins with a brown fibrous epidermis.

### (Species 19. Mus. Cuming.)

**PSAMMOBIA AMETHYSTUS.** *Psam. testâ elongato-transversa, compressâ, subæquilaterali, dense tenuistriatâ,*



*striis ad latus posticum subobliquis, elevatis; livido-purpurascente, purpureo-roseo pallidè radiatâ, latere antico rotundato, postico obliquè angulato et truncato.*

THE AMETHYST PSAMMOBIA. Shell elongately transverse, compressed, nearly equilateral, densely finely striated, striae on the posterior side rather oblique and raised; livid-purple, faintly rayed with purple rose, interior side rounded, posterior obliquely angled and truncated.

Hab. Ceylon; E. L. Layard.

Of a delicate livid-purple colour, rayed at rather distant intervals with faint purple-rose.

Species 20. (Mus. Cuming.)

PSAMMOBIA TRIPARTITA. *Psam. testâ elongato-transversâ, ellipsoideâ, compressâ, æquilaterali, maculis minimis albis confluentibus irregulariter sparsis notatâ seu obscure albo radiatâ, transversim striatâ, striis anticè latis et planis, in medio bipartitis et duplo numerosioribus, in latere subito lamellosis, imbricatis, acutis, latere antico semi-elliptico, obtuso, latere postico paulo latiore, obliquè truncato, angulo acutiusculo infernè terminato, angulo obtuso obsoleto ab umbone decurrente.*

THE TRIPARTITE PSAMMOBIA. Shell elongately transverse, ellipsoid, compressed, equilateral, violet, marked with irregularly sprinkled confluent minute white spots or obscurely white-rayed, transversely striated, striae anteriorly broad and flat, bipartite and twice as numerous in the middle, on the posterior side

suddenly lamellose, imbricated, and sharp, anterior side semi-elliptic, obtuse, posterior side rather broader, obliquely truncated, terminated at the lower part by a rather sharp angle, an obsolete obtuse angle running from the umbo.

DESHAYES, Pro. Zool. Soc. 1854, p. 391.

Hab. San Nicolas, Island of Zebu, Philippines; Cuming.

This interesting species may be readily recognized, by its surface being curiously separated into three distinct patterns of sculpture.

Species 21. (Mus. Cuming.)

PSAMMOBIA NIVOSA. *Psam. testâ ovato-transversâ, solidâ, compressiusculâ, utroque latere hiantè, inequilaterali, transversim substriatâ, roseo-purpurascente, maculis sparsis niveis irroratâ, latere antico breviori, latè rotundato, postico latiore, supernè recto, non de clivi, horizontali, latè obtusè truncato.*

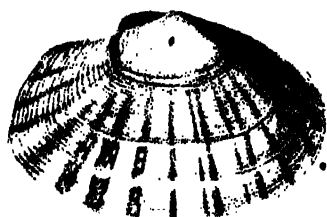
THE SNOWY PSAMMOBIA. Shell ovately transverse, rather solid, somewhat compressed, gaping on both sides, inequilateral, transversely faintly striated; rose-purple, bedewed with scattered snowy spots, anterior side shorter, broadly rounded, posterior side broader, straight at the upper part, not sloping, horizontal, broadly obtusely truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 317.

Hab. Dumaguete, Island of Negros, Philippines; Cuming.

Closely allied to *P. occidentis*, but uniformly distinguished by the various characters detailed in the foregoing description.





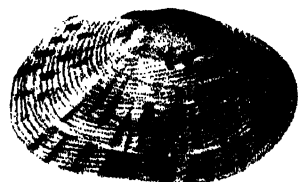
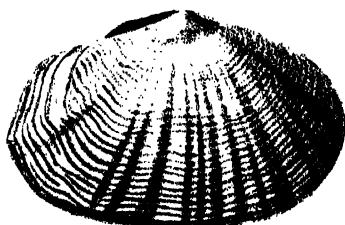
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26.



# PSAMMOBIA.

## PLATE IV.

### Species 22. (Mus. Cuming.)

PSAMMOBIA AFFINIS. *Psam. testā ovato-transversā, æquilaterali, transversim rudē striatā, striis in medio subobsoletis, anticè distinctis, posticè subplicatis; lutescente-albā, carneo-roseo versus margines promiscuè radiatā, lateribus rotundatis, postico parum truncato.*

THE ALLIED PSAMMOBIA. Shell ovately transverse, equilateral, transversely rudely striated, striae almost obsolete in the middle, distinct anteriorly, slightly plicated posteriorly; yellowish-white, promiscuously rayed towards the margins with flesh-rose, sides rounded, the posterior but little truncated.

*Hab.* New Zealand and the Philippine Islands.

A species intermediate in its character between *A. grata* and *æspertina*.

### Species 23. (Mus. Cuming.)

PSAMMOBIA PULCHELLA. *Psam. testā subangustē transversā, compressā, inequilaterali, obliquè nilidè elevato-striatā, striis ad marginem areæ posticæ abruptè terminatis; carneo-purpureā, ferrugineo tinctā, albo nulliradiatā, latere antico rotundato, postico declivi-truncato, areā subævigatā, ab umbone superficialiter impresso.*

THE PRETTY PSAMMOBIA. Shell rather narrowly transverse, compressed, inequilateral, obliquely neatly elevatedly striated, striae abruptly terminated at the edge of the posterior area; blue-purple, tinged with rust, many-rayed with white, anterior side rounded, posterior slopingly truncated, impressed superficially with a nearly smooth area from the umbo.

LAMARCK, Anim. sans vert. vol. vi. p. 177.

*Hab.* Bay of Manila, Philippines; Cuming.

The sculpture of this species consists of numerous oblique raised striae, which terminate suddenly along the edge of a superficially impressed area sloping posteriorly from the umbo.

### Species 24. (Mus. Cuming.)

PSAMMOBIA COMPTA. *Psam. testā elongato-transversā, æquilaterali, compressā, tenuiculā, levigatā et promiscuè sulcato-striatā, striis posticè plicatis; livido-cærulescente, purpureo-violaceo radiatā, latere antico*

*rotundato, postico declivi-truncato, aream concavam ab umbone formante.*

THE NEAT PSAMMOBIA. Shell elongately transverse, equilateral, compressed, rather thin, smooth or promiscuously groove-striated, striae posteriorly plicated. livid-blue, rayed with purple violet, anterior side rounded, posterior slopingly truncated, forming a concave area from the umbo.

DESHAYES, Pro. Zool. Soc. 1854, p. 321.

*Hab.* Catbalonga, Island of Samar, Philippines; Cuming.

The striae are almost obsolete in the centre of the valves, the surface of that part, being smooth, crossed by interrupted linear grooves.

### Species 25. (Mus. Cuming.)

PSAMMOBIA INTERMEDIA. *Psam. testā ovato-transversā, convexiusculā, solidā, æquilaterali, albidā, roseo tenui-radiatā, epidermide luteā partim indatā, transversim rugosā, rugis rubris, solidiusculis, promiscuè undulatis, posticè crassioribus, valdè irregularibus, latere antico rotundato, postico subattenuato, compresso, declivi-truncato.*

THE INTERMEDIATE PSAMMOBIA. Shell ovately transverse, rather convex, solid, equilateral, whitish, finely rayed with rose, partially covered with a yellow epidermis, transversely wrinkled, wrinkles rude, rather solid, promiscuously waved, posteriorly thicker and very irregular, anterior side rounded, posterior rather attenuated and compressed, slopingly truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 319.

*Hab.* Faro, coast of Portugal; McAndrew.

A fine species, chiefly distinguished by the boldness and irregular waved development of its wrinkled sculpture.

### Species 26. (Fig. a, b, Mus. Cuming.)

PSAMMOBIA ORNATA. *Psam. testā ovato-transversā, subventricosā, subæquilaterali, lutescente-albā, purpureo-castaneo et rufo-violaceo promiscuè maculatā et obscurè radiatā, obliquè striato-rugosā, rugis posticè irregulariter undato-plicatis, latere antico rotundato, postico truncato-rotundato, ab umbone convexo-impresso.*

THE ORNATE PSAMMOBIA. Shell ovately transverse, subventricose, nearly equilateral, yellowish-white,

promiscuously blotched and obscurely rayed with purple-chestnut and reddish-violet, obliquely striately wrinkled, wrinkles posteriorly irregularly wave-plicated, anterior side rounded, posterior truncately rounded, convexly impressed from the umbo.

DESHAYES, Pro. Zool. Soc. 1854, p. 323.

*Hab.* Island of Ticao, Philippines; Cuming.

The most obvious characteristic of this species is its peculiarity of painting, the surface being more or less ornamented with promiscuous blotches of purple-chestnut and reddish-violet inclining towards the margins in rays.

Species 27. (Mus. Cuming.)

PSAMMOBIA MARMOREA. *Psam. testā ovato-transversā, compressiusculā, solidulā; subæquilaterali, obliquè striato-rugosā, rugis posticè flexuoso-plicatis, lutescenti-albā, ad umbones lutescente-violaceā, purpureo-cas-*

*taneo interruptè radiatā, latere antico rotundato, postico compressè truncato, ab umbone obtusè superficialiter angulato.*

THE MARBLED PSAMMOBIA. Shell ovately transverse, rather compressed, rather solid, nearly equilateral, transversely obliquely striately wrinkled, wrinkles flexuously plicated, yellowish-white, yellowish-violet at the umboes, interruptedly rayed with purple-chestnut, anterior side rounded, posterior compressly truncated, obtusely superficially angled from the umbo.

DESHAYES, Pro. Zool. Soc. 1854, p. 324.

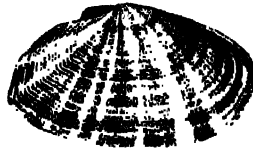
*Hab.* Moluccas and New Holland.

The painting of this species resembles that of the last in colour, but it is differently disposed, whilst the sculptured wrinkles are more obliquely pronounced, though nearly obsolete in the middle.





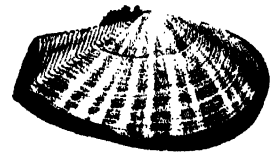
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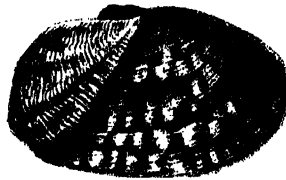
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34.



35.



# PSAMMOBIA.

## PLATE V.

Species 28. (Fig. 28 and 30, Mus. Cuming.)

PSAMMOBIA BICARINATA. *Psam. testā elongato-transversā, angustā, depressā, solidulā, æquilaterali, atro-violaceā, obsolete saturatiore radiatā, transversim sulcatā, sulcis versus marginem obliquè plicatis, latere antico rotundato, postico obliquè truncato et rostrato, ab umbone bicarinato.*

THE TWO-KEELED PSAMMOBIA. Shell elongately transverse, narrow, depressed, rather solid, equilateral, dark-violet, obsolete darker rayed, transversely grooved, grooves obliquely plicated towards the margin, anterior side rounded, posterior obliquely truncated and beaked, two-keeled from the umbo.

DESHAYES, Pro. Zool. Soc. 1854, p. 322.

Hab. Zanzibar; T. Thorne.

A dark purple shell, sometimes white, stained with rose, as in Fig. 30, sculptured with obliquely sloping folds near the margin, the posterior extremity being beaked, with two-keeled angles running down from the umbo.

Species 29. (Mus. Cuming.)

PSAMMOBIA ZONALIS. *Psam. testā angustè transversā, compressā, subæquilaterali, tenuissimè striatā, nitente, albidā, zonis transversis livido-roseis, latere antico rotundato, postico ab umbone subangulato, truncato.*

THE ZONED PSAMMOBIA. Shell narrowly transverse, compressed, nearly equilateral, very finely striated, shining, whitish, with transverse livid-rose zones, anterior side rounded, posterior slightly angled from the umbo, and truncated.

*Psammolæa zonalis*, Lamarck, Anin. sans vert. vol. vi. p. 182.

Hab. Tasmania; R. C. Gunn.

A smooth compressed species, very finely striated towards the margin and extremities, painted with delicate livid-rose zones.

Species 31. (Mus. Cuming.)

PSAMMOBIA TELLINÆFORMIS. *Psam. testā angustè transversā, compressā, subæquilaterali, densè tenuistriatā, nitente, stris ad latus posticum plicato-elevatis; albidā, livido-carneo pallidè radiatā, latere antico rotundato, postico rotundato-truncato, ab umbone superficialiter angulato.*

THE TELLINA-SHAPED PSAMMOBIA. Shell narrowly transverse, compressed, nearly equilateral, closely finely striated, shining, striae plicately raised on the posterior side; whitish, faintly rayed with livid-flesh. anterior side rounded, posterior rotundately truncated, superficially angled from the umbo.

DESHAYES, MS., Mus. Cuming.

Hab. — ?

Unusually compressed, with the posterior angular concavity only superficially developed, the surface being faintly rayed with a thin livid-flesh tint.

Species 32. (Mus. Cuming.)

PSAMMOBIA CASTRENSIS. *Psam. testā ovato-transversā, tenui, pellucidā, subæquilaterali, nitente, rix striatā, purpurascens-albā, maculis hieroglyphicis purpurascenscentibus pictā, epidermide tenui corneā prope margines indutā, lateribus rotundatis, postico tumidulo.*

THE CAMP-MARKED PSAMMOBIA. Shell ovately transverse, thin, pellucid, nearly equilateral, shining, scarcely striated, purplish-white, painted with obscure hieroglyphic purplish spots, covered with a thin horny epidermis near the margins, sides rounded, posterior slightly swollen.

HANLEY, Species of Shells, p. 59.

*Solen castrensis*, Chemnitz.

Hab. Sorsogon, Island of Luzon, Philippines; Cuming.

A semipellucid smooth shell, covered towards the margin with a thin horny epidermis, not unlike a *Solen* in general aspect.

Species 33. (Mus. Cuming.)

PSAMMOBIA FERROENSIS. *Psam. testā angustè transversā, subcompressā, subæquilaterali, striatā, stris ad latus posticum subplicatis, ad angulum stris radiantibus decussatis; albidā, roseo radiatā, ad margines epidermide vestitā, latere antico rotundato, postico attenuato-truncato ab umbonem angulato.*

THE FERROE PSAMMOBIA. Shell narrowly transverse, rather compressed, nearly equilateral, striated, striae subplated on the posterior side, decussated on the angle with radiating striae; whitish, rayed with pink clothed with an epidermis at the margins, anterior



side rounded, posterior attenuately truncated, angled from the umbo.

*Tellina Ferroensis*, Chemnitz, Conch. Cab. vol. vi. p. 99. pl. 10. f. 91.

*Tellina incarnata*, Pennant.

*Tellina radiata*, Da Costa.

*Tellina trifasciata*, Donovan.

*Tellina truncata*, Spengler.

*Psammobia Ferroensis*, Lamarck.

*Hab.* Ferroe and other Northern Isles, British Isles, and throughout the European Seas.

There is not much variation in this widely distributed species, the rose rays more or less predominating on a stone-white ground.

Fig. 34. (Mus. De Burgh.)

**PSAMMOBIA RUBICUNDA.** *Psam. testā ovato-transversā, gibbosā, utroque latere paululum nante, subaequaliterali, obliquē striatā, striis posticè plicatis et abruptè interruptis, deinde superne continuis, vividè sanguineo-roseā, albo floccatā, lateribus rotundatis superficialiter ab umbone impresso.*

**THE BRIGHT RED PSAMMOBIA.** Shell ovately transverse, gibbous, a little gaping at both ends, nearly equilateral, obliquely striated, striae posteriorly plicated and abruptly interrupted, then continuous towards the upper part, bright scarlet-rose flaked with white, sides rounded, posterior superficially impressed from the umbo.

*DESHAYES, Pro. Zool. Soc. 1854, p. 324.*

*Hab.* Island of Ticao, Philippines; Cuming.

This beautifully painted species is remarkable for the brightness and delicacy of its colour, the entire surface being a deep transparent blood-rose, flaked here and there with white. The specimen here figured is from the choice collection of Mrs. De Burgh. Mr. Cuming also possesses a fine and equally brilliantly painted specimen.

Species 35. (Fig. a, b, Mus. Cuming.)

**PSAMMOBIA ELEGANS.** *Psam. testā elongato-transversā, angustā, compressā, aequaliterali, transversim rugoplicatā, plicis subundulatis, latere antico rotundato, postico attenuato-rostrato, et ab umbone bicarinato, fuscescente-albā, fusco-purpureo promiscuè radiatā.*

**THE ELEGANT PSAMMOBIA.** Shell elongately transverse, narrow, compressed, equilateral, transversely rugosely plicated, slightly waved, anterior side rounded, posterior attenuately beaked, and two-keeled from the umbo, brownish-white, promiscuously rayed with brown-purple.

*DESHAYES, Pro. Zool. Soc. 1854, p. 322.*

*Hab.* Philippine Islands.

The posterior side of this species is developed in a manner very similar to that of the *P. bicarinata*.

Species 36. (Mus. Cuming.)

**PSAMMOBIA AMENA.** *Psam. testā elongato-transversā, depressā, tenui, semipellucidā, aequaliterali, dense transversim striatā, striis anticè latioribus, in medio furculis, striis posticis in valvā dextrā subobsoletis, in valvā sinistrā continuis; albā, rufo-violascente pallidissimè maculatā et radiatā, nitente, latere antico rotundato, postico obliquē truncato, ab umbone superficialiter angulato-impressā.*

**THE DELICATE PSAMMOBIA.** Shell elongately transverse, depressed, thin, semipellucid, equilateral, densely transversely striated, striae broader anteriorly, forked in the middle, posterior striae nearly obsolete in the right valve, in the left valve continuous, white, faintly rayed and spotted with reddish-violet, shining, anterior side rounded, posterior obliquely truncated, faintly angularly impressed from the umbo.

*DESHAYES, Pro. Zool. Soc. 1854, p. 323.*

*Hab.* —?

An extremely delicate shining species, with a characteristic difference, as above noted, in the sculpture of the two valves.





37a.



41.



37b.



43.



45.

# PSAMMOBIA.

## PLATE VI.

### Species 37. (Fig. a, b, Mus. Cuming.)

PSAMMOBIA TENUIS. *Psam. testâ elongato-transversâ, concentriculâ, tenui, hyalinâ, inæquilaterali, albidâ, interdum roseo radiatâ, obliquè tenuissimè striatâ, striis ad latus posticum abruptè terminatis, latere antico subattenuato, postico breviorè, latè truncato.*

THE THIN PSAMMOBIA. Shell elongately transverse, rather convex, thin, hyaline, inequilateral, whitish, sometimes rayed with rose, obliquely very finely striated, striae abruptly terminated on the posterior side, anterior side slightly attenuated, posterior shorter, broadly truncated.

DESHAYES, Pro. Zool. Soc. 1854, p. 320.

Hab. Philippine Islands; Cuming.

The posterior side of this delicate hyaline species is compressly truncated and more angularly sloped in some specimens than in others.

### Species 38. (Mus. Cuming.)

PSAMMOBIA COSTULATA. *Psam. testâ elongato-transversâ, tenuiculâ, inæquilaterali, concentricè sulcato-striatâ, albidâ, intensè roseo pauciradiatâ, latere antico attenuato-rotundato, postico breviorè, rotundato, radiatim tenui-costato.*

THE FINELY RIBBED PSAMMOBIA. Shell elongately transverse, rather thin, inequilateral, concentrically groove-striated, whitish, marked with a few deep rose rays, anterior side attenuately rounded, posterior shorter, rounded, radiately finely ribbed.

TURTON, Dithyra Brit. p. 87. pl. 6. f. 8.

*Psammobia discors*, Philippi.

Hab. Porto Santo, Madeiras, Sicily, British Isles.

A small elongately transverse species, sculptured in a characteristic manner on the posterior side with fine radiating ribs.

### Species 39. (Mus. Cuming.)

PSAMMOBIA ABRUPTA. *Psam. testâ elongato-transversâ, tenui, pellucidâ, æquilaterali, compressâ, albidâ, transversim costatâ, costis obtusis, subobliquis, posticè abruptè interruptis, latere postico compresso, costis latè radiantibus sculpto, superne recto, ad extremitatem rotundato-truncato.*

THE ABRUPT PSAMMOBIA. Shell elongately transverse, thin, pellucid, equilateral, compressed, whitish, transversely ribbed, ribs obtuse, rather oblique, posteriorly abruptly interrupted, posterior side compressed, sculptured with broad radiating ribs, straight at the upper part, rotundately truncated at the extremity.

DESHAYES, Pro. Zool. Soc. 1854, p. 324.

Hab. Philippine Islands; Cuming.

The ribbed sculpture of this delicate little transparent shell is very conspicuous.

### Species 40. (Mus. Cuming.)

PSAMMOBIA EBURNEA. *Psam. testâ oblongo-transversâ, valdè compressâ, levigatâ, nitentè, albâ, inæquilaterali, latere antico latè rotundato, postico breviusculo, ad marginem superum angustè angulato-impresso, ad extremitatem rotundato.*

THE IVORY PSAMMOBIA. Shell oblong-transverse, very compressed, smooth, shining, white, inequilateral, anterior side broadly rounded, posterior rather short, narrowly angularly impressed along the upper margin, rounded at the extremity.

Hab. Malacca.

A thin compressed smooth ivory-like shell, with a simple narrowly impressed slope along the upper posterior edge.

### Species 41. (Mus. Cuming.)

PSAMMOBIA CANDIDULA. *Psam. testâ oblongo-transversâ, tumidulâ, crassiusculâ, subæquilaterali, levigatâ, irregulariter incremento interruptâ, fluorescentè albâ, lateribus rotundatis, ab umbonem declivibus, latere postico punctulato breviorè, obtusè angulato.*

THE WHITE PSAMMOBIA. Shell oblong-transverse, rather swollen, somewhat thick, nearly equilateral, smooth, irregularly interrupted with lines of growth, yellowish-white, sides rounded, slanting from the umbo, posterior side rather the shorter, obtusely angled.

DESHAYES, Pro. Zool. Soc. 1854, p. 319.

Hab. Philippine Islands; Cuming.

Of a solid dead-white aspect, smooth throughout, with only the faintest indication of an angle on the posterior side.

PSAMMOBIA.—PLATE VI.

Species 42. (Mus. Cuming.)

PSAMMOBIA MALACCANA. *Psam. testā ovato-transversā, subcompressā, tenui, æquilaterali, nitente-albā, nitidè obliquè sulcato-striatā, striis posticè abruptè interruptis, latere antico rotundato, postico latiore, subangulato-truncato et concentricè striato.*

THE MALACCA PSAMMOBIA. Shell ovately transverse, somewhat compressed, thin, equilateral, shining white, neatly obliquely groove-striated, striae abruptly interrupted on the posterior side, anterior side rounded, posterior broader, slightly angularly truncated and concentrically striated.

Hab. Malacca.

A delicate shining white shell, neatly sculptured with oblique grooved striae, which suddenly terminate on the posterior side.

Species 43. (Mus. Cuming.)

PSAMMOBIA MENKEANA. *Psam. testā elongato-transversā, angustā, æquilaterali, liris plicatis subirregularibus concentricè sculptā, flavescēte-albā, pallidissimè violaceo radiatā, latere antico latè rotundato, postico obtusè truncato obtusissimè angulato.*

MENKE'S PSAMMOBIA. Shell elongately transverse, narrow, equilateral, concentrically sculptured with irregular plicated ridges, yellowish-white, very faintly violet-rayed, interior side broadly rounded, posterior obtusely truncated, very obtusely angled.

Hab. East coast of Australia.

A narrow species, sculptured concentrically with somewhat irregular plicated ridges.

Species 44. (Mus. Cuming.)

PSAMMOBIA ANGUSTA. *Psam. testā elongato-transversā,*

*subæquilateralī, tenui, fragili, transversim inæqualiter plicato-striatā, striis posticè angustè elevatis, flavescēte-albā, lateribus rotundatis, postico obscurè obtusè angulato.*

THE NARROW PSAMMOBIA. Shell elongately transverse, nearly equilateral, thin, fragile, transversely somewhat plicately striated, striae posteriorly narrowly raised, yellowish-white, sides rounded, posterior obscurely obtusely angled.

DESIHAYES, Pro. Zool. Soc. 1854, p. 320.

Hab. Senegal.

The striae in this as in the preceding species incline to be obliquely plicated, but are developed on the posterior side in narrow ridges.

Species 45. (Mus. Cuming.)

PSAMMOBIA LAYARDI. *Psam. testā elongato-transversā, depressā, æquilateralī, obliquè minutè sulcato-striatā, striis ad latus posticum abruptè terminatis, latere postico striis concentricis et radiantibus fortiter decussato, sublatè obtusè angulato, rotundato-truncato; flavescēte, albo et violaceo-fusco marmoratā.*

LAYARD'S PSAMMOBIA. Shell elongately transverse, depressed, equilateral, obliquely minutely groove-striated, striae abruptly terminated on the posterior side, posterior side strongly decussated with concentric and radiating striae, rather broadly obtusely angled, rotundately truncated; yellowish, mottled with white and violet-brown.

DESIHAYES, Pro. Zool. Soc. 1854, p. 323.

Hab. Philippine Islands; Cuming.

Elegantly sculptured and mottled throughout with violet-brown and white.





46.



47.



48.



49.



50a.



50b.



51.



52.



53.



54.

# PSAMMOBIA.

## PLATE VII.

### Species 46. (Mus. Cuming.)

**PSAMMOBIA PULCHERRIMA.** *Psam. testā elongato-transversā, compressā, tenui, subæquilateralī, violaceo-roseā, obsolete albo-radiatā, intus roseo-purpurascēte, obliquē transversim costatā, costis simplicibus, depressis, superne acutiusculis, ad latus posticum subito interruptis, latere postico paulo hiantē, costulis radiantibus scabrosis, ad marginem denticulatis.*

THE VERY BEAUTIFUL PSAMMOBIA. Shell elongately transverse, compressed, thin, nearly equilateral, violet-rose, obsoletely white-rayed, interior rose-purple, obliquely transversely ribbed, ribs simple, depressed, rather sharp at the upper part, suddenly interrupted at the posterior side, posterior side a little gaping, with small scabrous radiating ribs, denticulated at the edge.

DESHAYES, Pro. Zool. Soc. 1854, p. 325.

*Hab.* — ?

This beautiful little species is remarkable for its strongly marked and strongly contrasted sculpture, the posterior radiating ribs being obtusely prickly scaled.

### Species 47. (Mus. Cuming.)

**PSAMMOBIA PALMULA.** *Psam. testā oblongo-transversā, arcuatā, tenui, fragili, inæquilateralī, obliquē costulatā, costulis anticè subtilibus, subundulatis, posticè continuis et radiantibus, lutescente-albā, maculis per paucis pallidè rufescentibus aspersā, latere antico attenuato-rotundato, postico obliquē truncato et paululum hiantē.*

THE LITTLE OAR PSAMMOBIA. Shell oblong-transverse, arched, thin, fragile, inequilateral, obliquely finely ribbed, ribs anteriorly fine, slightly waved, posteriorly continuous and radiating, yellowish-white, sprinkled with a few faint red spots, anterior side attenuately rounded, posterior obliquely truncated and a little gaping.

DESHAYES, Pro. Zool. Soc. 1854, p. 325.

*Hab.* Sydney, New Holland.

The obliquely sloping ribs in this species are not interrupted on the posterior side, but become gradually open and rayed.

### Species 48. (Mus. Cuming.)

**PSAMMOBIA DISPAR.** *Psam. testā ovato-transversā, tenui, inæquilateralī, lutescente-albā, roseo-purpuratā, obliquē linito-striatā, striis ad latus posticum interruptis, latere antico latiusculo, attenuato-rotundato, postico brevi, subrostrato, paulo hiantē, conspicuè radiatim costatā.*

THE UNEQUAL PSAMMOBIA. Shell ovately transverse, thin, inequilateral, yellowish-white, rose-mottled, obliquely ridge-striated, striae interrupted at the posterior side, anterior side rather broad, attenuately rounded, posterior short, somewhat beaked, a little gaping, conspicuously radiately ribbed.

DESHAYES, Pro. Zool. Soc. 1854, p. 325.

*Hab.* Philippine Islands; Cuming.

Chiefly distinguished by the posterior side being somewhat beaked and conspicuously cross-ribbed, in contrast with the obliquely sloping striae.

### Species 49. (Mus. Cuming.)

**PSAMMOBIA DENTICULATA.** *Psam. testā elongato-transversā, arcuatā, tenui, subæquilateralī, albā, ad umbones roseo tinctā, obliquē undato-liratā, posticè radiatim costatā, costis scabrosis, latere postico obliquē truncato, hiantē, ad marginem denticulato.*

THE TOOTHED PSAMMOBIA. Shell elongately transverse, arched, thin, nearly equilateral, whitish, tinged with rose at the umbones, obliquely wave-ridged, posteriorly radiately ribbed, ribs scabrous, posterior side obliquely truncated, gaping, denticulated at the edge.

ADAMS and REEVE, Moll. Voy. Samarang, p. 80. pl. 24. f. 2.

*Hab.* China Sea.

The ribs on the posterior side are prickly-scaled, radiating openly, so as to show the interstices deeply grooved.

### Species 50. (Fig. a, b, Mus. Cuming.)

**PSAMMOBIA SQUAMOSA.** *Psam. testā oblongo-transversā, arcuatā, tenui, subæquilateralī, obliquē undato-liratā, posticè radiatim costatā, costis prominentibus, squamosis, subdistantibus, carnelescente-violaceā, interdum albā, roseo marmoratā, latere antico rotundato, postico obliquē truncato et hiantē.*



**THE SCALED PSAMMOBIA.** Shell oblong-transverse, arched, thin, nearly equilateral, obliquely wave-ridged, posteriorly radiately ribbed, ribs prominent, sealed, rather distant, blue-violet, sometimes whitish, mottled with rose, anterior side rounded, posterior obliquely truncated and gaping.

LAMARCK, *Apim. sans vert.* vol. vi. p. 176.

*Hab.* Island of Masbate, Philippines; Cuming.

A delicate and beautifully sculptured species, chiefly distinguished by the prominent openly spread development of the posterior ribs and gaping extremity.

Species 51. (Mus. Cuming.)

**PSAMMOBIA RUGULOSA.** *Psam. testâ elongato-transversâ, subarcuatâ, tenui, inequilaterali, obliquè ruguloso-liriatâ, posticè radialim costato, costis scabrosis, lutescente-albâ, latere antico attenuato-rotundato, postico attenuato-rostrato et obliquè truncato.*

**THE WRINKLED PSAMMOBIA.** Shell elongately transverse, slightly arched, thin, inequilateral, obliquely wrinkle-ridged, posteriorly radiately ribbed, ribs scabrous, yellowish-white, anterior side attenuately rounded, posterior attenuately beaked and obliquely truncated.

ADAMS and REEVE, *Moll. Voy. Samarang*, p. 81. pl. 21. f. 4.

*Hab.* China Sea.

The posterior side of this species is more attenuately beaked than in other examples of the genus.

(Species 52. Mus. Cuming.)

**PSAMMOBIA PENNATA.** *Psam. testâ ovato-transversâ, inequilaterali, utrinque hiantè, albo-griseâ, albo et rubescente irregulariter minutè maculatâ, obliquè tenuissimè striatâ, striis ad latus posticum abruptè interruptis, latere postico depressiusculo, rix truncato, bipartito, divaricatum corrugato-costato.*

**THE WINGED PSAMMOBIA.** Shell ovately transverse, inequilateral, gaping at each side, whitish-grey, irregularly minutely spotted with white and pale red, obliquely very finely striated, striae abruptly inter-

rupted at the posterior side, posterior side rather depressed, scarcely truncated, bipartite, divaricately wrinkle-ribbed.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 325.

*Hab.* Philippine Islands; Cuming.

The posterior side of this species is less distinguished in form from the anterior than usual, and both sides gap at the extremity.

Species 53. (Mus. Cuming.)

**PSAMMOBIA PETALINA.** *Psam. testâ oblongo-transversâ, tenuissimâ, pellucidâ, valdè inequilaterali pallidè violascente, violaceo quinquerradiatâ, nitente, latere antico elongato, postico brevi, ambobus rotundatis.*

**THE LITTLE PETAL PSAMMOBIA.** Shell oblong-transverse, very thin, transparent, very inequilateral, pale violet, five-rayed with darker violet, shining, anterior side elongated, posterior side short, both rounded.

DESHAYES, *Pro. Zool. Soc.* 1854, p. 320.

*Hab.* China Sea.

An extremely delicate, transparent, violet-rayed shell, without any indication of the peculiar sloping sculpture which is chiefly characteristic of this genus.

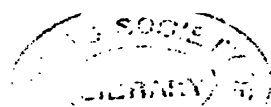
Species 54. (Mus. Cuming.)

**PSAMMOBIA SUFFUSA.** *Psam. testâ oblongo-transversâ, tenui, subcompressâ, subaequilaterali, obliquè costastriatâ, striis ad latus posticum subito interruptis, purpurascente-violaceâ, albo tenuiradiatâ, latere antico rotundato, postico latiore, laevigato, subangulato-truncato.*

**THE BLUSHING PSAMMOBIA.** Shell oblong-transverse, thin, rather compressed, nearly equilateral, obliquely ridge-striated, striae suddenly interrupted on the posterior side, purple-violet, finely rayed with white, anterior side rounded, posterior broader, smooth, somewhat angularly truncated.

*Hab.* Malacca.

A thin, purple-violet shell, delicately rayed with white, conspicuously sculptured with obliquely sloping ridges.





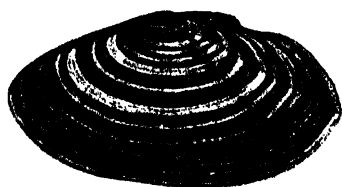
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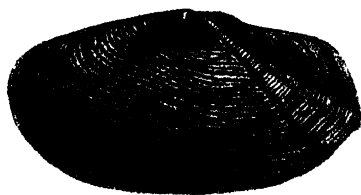
58.



59 a.



59 b.



60.

# PSAMMOBIA.

## PLATE VIII.

### Species 55. (Mus. Hanley.)

**PSAMMOBIA CASTA.** *Psam. testā oblongo-ovatā, plano-convexā, pellucido-albā, pallidē rosatā, posticē flexuoso-angulatā, sulcis linearibus tenuissimis obliquē sculptā, ad angulum posticum interruptis.*

**THE CHASTE PSAMMOBIA.** Shell oblong-ovate, flatly convex, transparent white, faintly rose-tinted, posteriorly flexuously angled, obliquely sculptured with very fine minute linear grooves, which are interrupted at the posterior angle.

*Hab.* Guatemala.

A very delicate semitransparent shell, sculptured obliquely with very fine linear grooves, which terminate some little distance before reaching the posterior flexuosity.

### Species 56. (Mus. Cuming.)

**PSAMMOBIA PARVULA.** *Psam. testā oblongā, planiusculā, posticē impresso-flexuosā, tenuissimē decussatim striatā, nilente-albā, versus umbonem carneo tinctā.*

**THE SMALL PSAMMOBIA.** Shell oblong, rather flat, posteriorly impressly flexuous, finely decussately striated, shining-white, flesh-tinged towards the umbo.

*Hab.* — ?

Of very simple form, but distinct from any hitherto described species.

### Species 57. (Mus. Cuming.)

**PSAMMOBIA VAGINOIDES.** *Psam. testā oblongo-ovatā, convexiusculā, æquilaterali, lateribus rotundatis, tenuissimē decussatim striatā, sordidē albā, versus umbonem rosatā, epidermide stramineā ad marginem indutā.*

**THE SHEATH-LIKE PSAMMOBIA.** Shell oblong-ovate, rather convex, equilateral, sides rounded, very finely decussately striated; dull white, pink towards the umbo, covered at the margin with a straw-coloured epidermis.

*Hab.* — ?

Equilateral, with the sides uniformly rounded, pink-tinged about the umbo, with a pale straw-coloured epidermis at the margin.

### Species 58. (Mus. Cuming.)

**PSAMMOBIA LINEOLATA.** *Psam. testā oblongā, ad latera subacuminatā, planā, posticē subangulato-flexuosā; carneo-rosatā, lineis opaco-albis concentricē fasciatā.*

**THE LINEOLATED PSAMMOBIA.** Shell oblong, somewhat acuminate at the sides, flat, posteriorly, slightly angularly flexuous; flesh-pink, banded with irregular, concentric, opaque white lines.

*GRAY, MS., Mus. Brit.*

*Hab.* New Zealand.

A rather flatly-compressed shell, of a deep flesh-pink colour, peculiarly marked with whitish concentric bands and lines.

### Species 59. (Fig. a, b, Mus. Cuming.)

**PSAMMOBIA CONVEXA.\*** *Psam. oblongo-ovatā, plano-convexā, crassiusculā, lateribus subæqualibus, levigatā, nilente; carneo-albā, rosaceo variē radiatā et minutissimē marmoratā.*

**THE CONVEX PSAMMOBIA.** Shell oblong-ovate, flatly convex, rather thick, sides nearly equal, smooth, shining; flesh-white, variously rayed with pink, and very minutely mottled.

*Hab.* — ?

Distinguished chiefly by its convex though flattened form.

### Fig. 60. (Mus. Cuming.)

**PSAMMOBIA CÆRULESCENS.** *Psam. testā subelongato-oblongā, depressā, posticē latē superficialiter flexuosā, subangulatā, striis elevatis obliquis sculptā, striis ad angulum posticum interruptis; pallidē violaceo-cærulescente, umbonibus purpureo biradiatis.*

**THE BLuish PSAMMOBIA.** Shell somewhat elongately oblong, depressed, posteriorly broadly superficially flexuous, slightly angled, sculptured with oblique raised striae, striae interrupted at the posterior angle; pale violet-blue umboes, two-rayed with purple.

*LAMARCK, Anim. sans vert. vol. vi. p. 170.*

*Psammobia bipartita*, Philippi.

*Hab.* Ceylon.

Of a delicate violet-blue, with the sculpture suddenly interrupted at the edge of the posterior angle.



# PSAMMOBIA.

	Plate.	Species.		Plate.	Species.
<i>abrupta, Deshayes</i> . . . . .	VI.	39	<i>maxima, Deshayes</i> . . . . .	I.	4
<i>affinis, Reeve</i> . . . . .	IV.	22	<i>marmorea, Deshayes</i> . . . . .	IV.	27
<i>amethystus, Wood</i> . . . . .	III.	19	<i>Menkeana, Reeve</i> . . . . .	VI.	43
<i>angusta, Deshayes</i> . . . . .	VI.	44	<i>modesta, Deshayes</i> . . . . .	I.	3
<i>amœna, Deshayes</i> . . . . .	V.	36	<i>nivosa, Deshayes</i> . . . . .	III.	21
<i>anomala, Deshayes</i> . . . . .	I.	5	<i>occidens (Solen), Chemnitz</i> . . . . .	II.	11
<i>bicarinata, Deshayes</i> . . . . .	V.	28	<i>oriens, Deshayes</i> . . . . .	I.	1
<i>cærulescens, Lamarck</i> . . . . .	VIII.	60	<i>ornata, Deshayes</i> . . . . .	IV.	26
<i>hipartita, Philippi</i> . . . . .	VIII.	60	<i>palmula, Deshayes</i> . . . . .	VII.	47
<i>candidula, Deshayes</i> . . . . .	VI.	41	<i>parvula, Reeve</i> . . . . .	VIII.	56
<i>casta, Reeve</i> . . . . .	VIII.	55	<i>pennata, Deshayes</i> . . . . .	VII.	52
<i>castrensis (Solen), Chemnitz</i> . . . . .	V.	32	<i>petalina, Deshayes</i> . . . . .	VII.	53
<i>compta, Deshayes</i> . . . . .	IV.	24	<i>præstans, Deshayes</i> . . . . .	III.	16
<i>convexa, Reeve</i> . . . . .	VIII.	59	<i>puella, Deshayes</i> . . . . .	I.	2
<i>corrugata, Deshayes</i> . . . . .	II.	9	<i>pulchella, Lamarck</i> . . . . .	IV.	23
<i>costulata, Turton</i> . . . . .	VI.	38	<i>pulcherrima, Deshayes</i> . . . . .	VII.	46
<i>denticulata, Adams and Reeve</i> . . . . .	VII.	49	<i>rubicunda, Deshayes</i> . . . . .	V.	34
<i>discors, Philippi</i> . . . . .	VI.	38	<i>rugulosa, Adams and Reeve</i> . . . . .	VII.	51
<i>dispar, Deshayes</i> . . . . .	VII.	48	<i>solida, Philippi</i> . . . . .	III.	18
<i>eburnea, Reeve</i> . . . . .	VI.	40	<i>squamosa, Lamarck</i> . . . . .	VII.	50
<i>elegans, Deshayes</i> . . . . .	V.	35	<i>Stangeri, Gray</i> . . . . .	II.	12
<i>Ferroensis (Tellina), Chemnitz</i> . . . . .	V.	33	<i>suffusa, Reeve</i> . . . . .	VII.	54
<i>florida, Lamarck</i> . . . . .	III.	17	<i>Tellinæformis, Deshayes</i> . . . . .	V.	31
<i>florida, Turton</i> . . . . .	I.	6	<i>Tellinella, Lamarck</i> . . . . .	I.	6
<i>grata, Deshayes</i> . . . . .	II.	10	<i>tenuis, Deshayes</i> . . . . .	VI.	37
<i>insignis, Deshayes</i> . . . . .	III.	15	<i>togata, Deshayes</i> . . . . .	II.	14
<i>intermedia, Deshayes</i> . . . . .	IV.	25	<i>tripartita, Deshayes</i> . . . . .	III.	20
<i>lata, Deshayes</i> . . . . .	I.	7	<i>tristis, Deshayes</i> . . . . .	II.	13
<i>Layardi, Deshayes</i> . . . . .	VI.	45	<i>vaginoides, Reeve</i> . . . . .	VIII.	57
<i>Lessoni, De Blainville</i> . . . . .	II.	8	<i>vespertina (Solen), Gmelin</i> . . . . .	III.	17
<i>lineolata, Gray</i> . . . . .	VIII.	58	<i>zonalis (Psammotœa), Lamarck</i> . . . . .	V.	29
<i>Malaccana, Reeve</i> . . . . .	VI.	42			

## ERRATUM.

Sp. 18, *P. solida*, for Gray read Philippi in Abbildungen.



MONOGRAPH  
OF THE GENUS  
P S A M M O T E L L A.

" Yet Nature's charms, the hills and woods,  
The sweeping vales and foaming floods,  
Are free alike to all."—*Burns*.









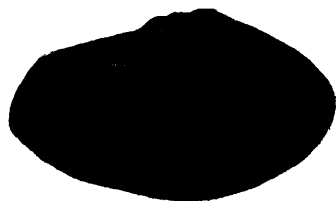
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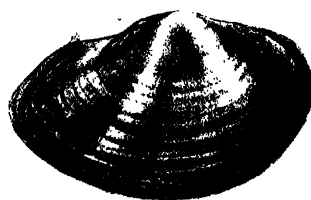
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# PSAMMOTELLA.

## PLATE I.

Genus PSAMMOTELLA, Deshayes.

*Testa ovato-transversa, convexiusculâ; subæquilateralis, utrinque hians, antice rotundata, postice longior, truncata vel subrostrata, concentricè striata, aut lutea aut violacea, epidermide tenui deciduâ corneâ. Cardio dentibus parvis centralibus erectis in valvâ sinistrâ, in valvâ dextrâ unicâ, callositate oblongâ in ambabus. Ligamentum externum. Impressio muscularis pallii sinu oblongo peramplo.*

Shell ovately transverse, rather convex, nearly equilateral, gaping at both ends, anteriorly rounded, posteriorly longer, truncated or slightly beaked, concentrically striated, yellowish or violet, with a thin horny deciduous epidermis. Hinge with two small erect central teeth in the left valve, and one in the right, and an oblong callosity in both valves. Ligament external. Muscular impression of the mantle distinguished by a very large oblong sinus.

This genus, of which we have here represented seven species, was recently founded by M. Deshayes during an examination of the family to which they belong, lately made by that distinguished conchologist in the collection of Mr. Cuming. While engaged in arranging the *Psammobie* and their allies, M. Deshayes recognized a distinct generic type to which these were severally referable, none of which had hitherto been described. They are distinguished by a peculiarity of form, and they agree especially in substance and tone of colouring. With a convexly oblong nearly equilateral form, the posterior side being rather the longer, they are all densely concentrically striated, and either yellowish or deep violet, chiefly of the latter colour, with a thin deciduous epidermis.

So far as the localities are known, two are from the Philippine Islands, one from Malacca, one from Ceylon, and one from the Red Sea.

### Species 1. (Mus. Cuming.)

PSAMMOTELLA PHILIPPINENSIS. *Psam. testâ ovato-transversâ, convexiusculâ, subæquilateralis, concentricè irregulariter plicato-striatâ, albidâ, epidermide fulvâ versus marginem indutâ, lateribus supernè declivibus, antico subangustè rotundato, postico obliquè attenuato-truncato, margine inferiore semicirculari.*

THE PHILIPPINE PSAMMOTELLA. Shell ovately transverse, rather convex, nearly equilateral, concentrically

irregularly plicately striated, whitish, covered towards the margin with a fulvous epidermis, sides sloping at the upper part, anterior rather narrowly rounded, posterior obliquely attenuately truncated, lower margin semicircular.

DESHAYES, MS., Mus. Cuming.

*Hab.* San Nicolas, Island of Zebu, Philippines; Cuming.

Of light swollen structure, nearly equilateral, and ovately attenuated at each end.

### Species 2. (Mus. Cuming.)

PSAMMOTELLA MALACCENSIS. *Psam. testâ ovato-transversâ, tenui, æquilateralis, convexiusculâ, lævigatâ vel subtilissimè striatâ, pellucido-albâ, latere antico subangustè rotundato, postico subcompresso, truncato-rotundato.*

THE MALACCA PSAMMOTELLA. Shell ovately transverse, thin, equilateral, slightly convex, smooth or faintly striated, transparent white, anterior side rather narrowly rounded, posterior somewhat compressed, truncately rounded.

DESHAYES, MS., Mus. Cuming.

*Hab.* Malacca,

A small species, of simple form and semitransparent substance, the posterior side being rather compressed.

### Species 3. (Mus. Cuming.)

PSAMMOTELLA SKINNERI. *Psam. testâ oblongo-transversâ, minutè impresso-striatâ, tenuissimâ, subovitrâ, lineis nigricantibus undatis, radiisque duobus, notatâ, epidermide corneâ olivaceâ nitente indutâ, lateribus subattenuatis, postico breviorè, viz truncato.*

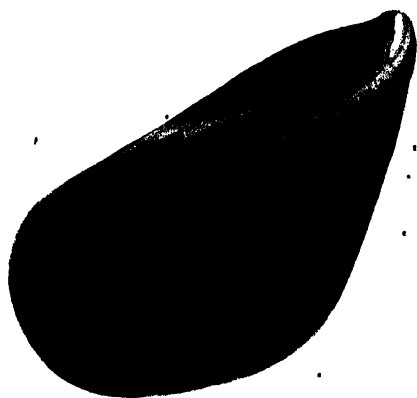
SKINNER'S PSAMMOTELLA. Shell oblong transverse, minutely impressly striated, very thin, somewhat glassy, marked with black zigzag lines and two rays, covered with a shining olive horny epidermis, sides rather attenuated, posterior rather shorter, scarcely truncated.

*Hab.* Ceylon; Major Skinner.

Of very distinct character from the rest of the genus, the shell being exceedingly thin and transparent, marked with blackish zigzag lines, covered with a shining horny epidermis.







1.



2a.



2b.

# MYTILUS:

PLATE I.

Genus MYTILUS, *Linnaeus*.

*Testa æqualvis, obliquè flabelliformis, plus minus trigona, bysso affixa, umbonibus acutis, subrectis, terminalibus; latere antico sæpe compressè expanso, postico subcontracto; epidermide plerumque corneâ, interdum pilosâ. Cardio edentulus, interdum subcrenulatus, ligamento marginali, subinterno. Impressio muscularis composita, sublateralis.*

Shell equi-ovalve, obliquely fan-shaped, more or less triangular, affixed by a byssus, umboes sharp, nearly straight, terminal; anterior side often compressly expanded, posterior somewhat contracted; epidermis generally horny, sometimes hairy. Hinge toothless, sometimes slightly crenulated, with the ligament marginal and partially internal. Muscular impression compound, sublateral.

The *Mytili* are chiefly characterized by an elongately fan-shaped growth, more or less beaked towards the umboes, having the interior side for the most part compressly expanded and the posterior arcuately contracted. Some species, distinguished by the presence of a thin shelf across the interior of the umboes, are arranged by authors as a separate genus under the name of *Septifer*; and others, characterized by a not unimportant difference in the animal, have been separated under the name of *Dreissena*. Neither of these forms have been however allowed to take the rank of genera by Deshayes.

So much do the *Mytili* vary in appearance under different circumstances of habitation, as exemplified by the two figures of *M. Californianus* in the accompanying Plate, that it has been impossible to identify many of the species described by Continental conchologists. Sixty-one are

all that have been satisfactorily made out by procurable specimens; their range of habitation extends over the seas of both hemispheres.

Fig. 1. (Mus. Cuming.)

This delicately-formed and exquisitely-coloured shell is the *Mytilus flavus* of Poli, now universally regarded as a variety of *M. edulis*, for description of which see Pl. VIII. Sp. 33.

Species 2. (Fig. 2 a, b, Mus. Cuming.)

MYTILUS CALIFORNIANUS. *Myt. testâ pyriformi-elongatâ, subcrenatâ, solidâ, radiatim costatâ, sulcis intermediis conspicuè excavatis, concentricè rudè corrugatâ, areâ posticâ lævigatâ; luteo-olivaceâ, in ætate nigricante-cæruleâ.*

THE CALIFORNIAN MYTILUS. Shell pyriformly elongated, slightly arched, solid, radiately ribbed, intermediate grooves conspicuously excavated, concentrically rudely wrinkled, posterior area smooth; yellowish-olive, blackish-blue with age.

CONRAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vii. p. 242.

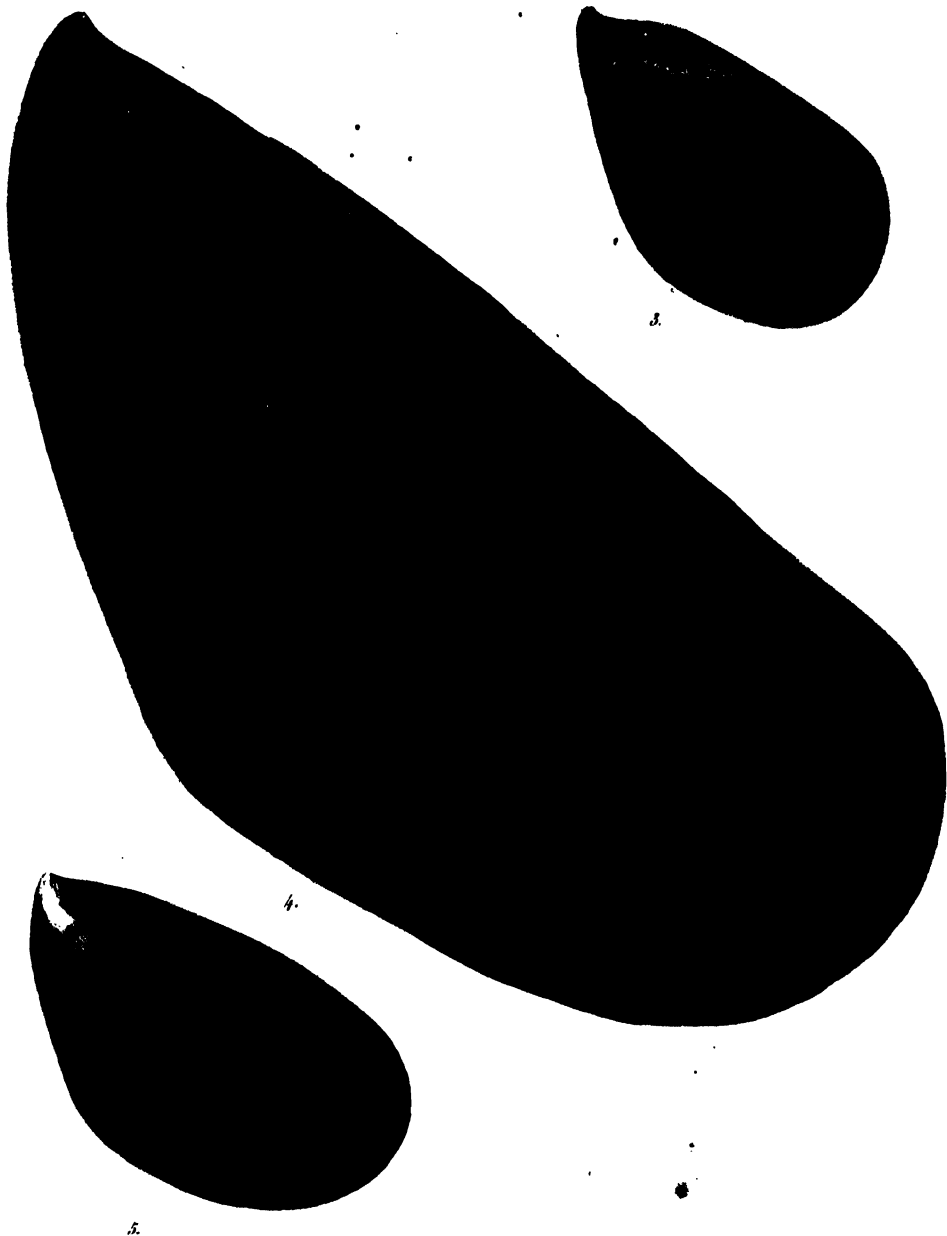
Hab. California.

The examples here figured of this fine species represent its extreme states. Young specimens, as Fig. 2 b, are rayed with strongly excavated grooves, and the shell is of a rich yellowish-olive colour. In a more advanced state, the grooves become more and more obsolete, and the shell assumes a rough blackish-blue tone.









# MYTILUS.

## PLATE II.

### Species 3. (Mus. Cuming.)

**MYTILUS AFR.** *Myt. testā trigono-oblongā, posticē compressā, vix angulatā, concentricē irregulariter striatā, aurantio-fuscă, lineis saturatioribus acutē undatis lentiginosā, extremitate posticā viridi.*

**THE AFRICAN MYTILUS.** Shell triangularly oblong, posteriorly compressed, scarcely angled, concentrically irregularly striated; orange-brown, freckled with darker zigzag lines, green at the posterior extremity.

(Gmelin, Syst. Nat. p. 3358.

*Mytilus Africanus*, Chemnitz.

*Hab.* Algiers.

Readily distinguished by its orange-brown tone of colour, freckled with zigzag markings.

### Species 4. (Mus. Cuming.)

**MYTILUS UNGULATUS.** *Myt. testā elongato-oblongā, crassiusculā, concentricē striatā, latere postico subangulatō compresso, antice latiusculā, intense violaceo-nigrā.*

**THE HOOKED MYTILUS.** Shell elongately oblong, rather thick, concentrically striated, posterior side rather

angularly compressed, anteriorly rather broad; dark violet-black.

LINNAEUS, Syst. Nat. (Gmel. edit.) No. 12.

*Mytilus latus*, pars; Lamarck.

*Hab.* Concepcion, Chili; Cuming.

Of very large size, rather flat, straight on the posterior side, obtusely angled in front, covered with a rich glazed violet-black epidermis.

### Species 5. (Mus. Cuming.)

**MYTILUS COMPRESSUS.** *Myt. testā oblongo-ovatā, compressā, concentricē irregulariter striatā, latere postico obtusē compressē angulatō, inferius olivaceo-castaneā.*

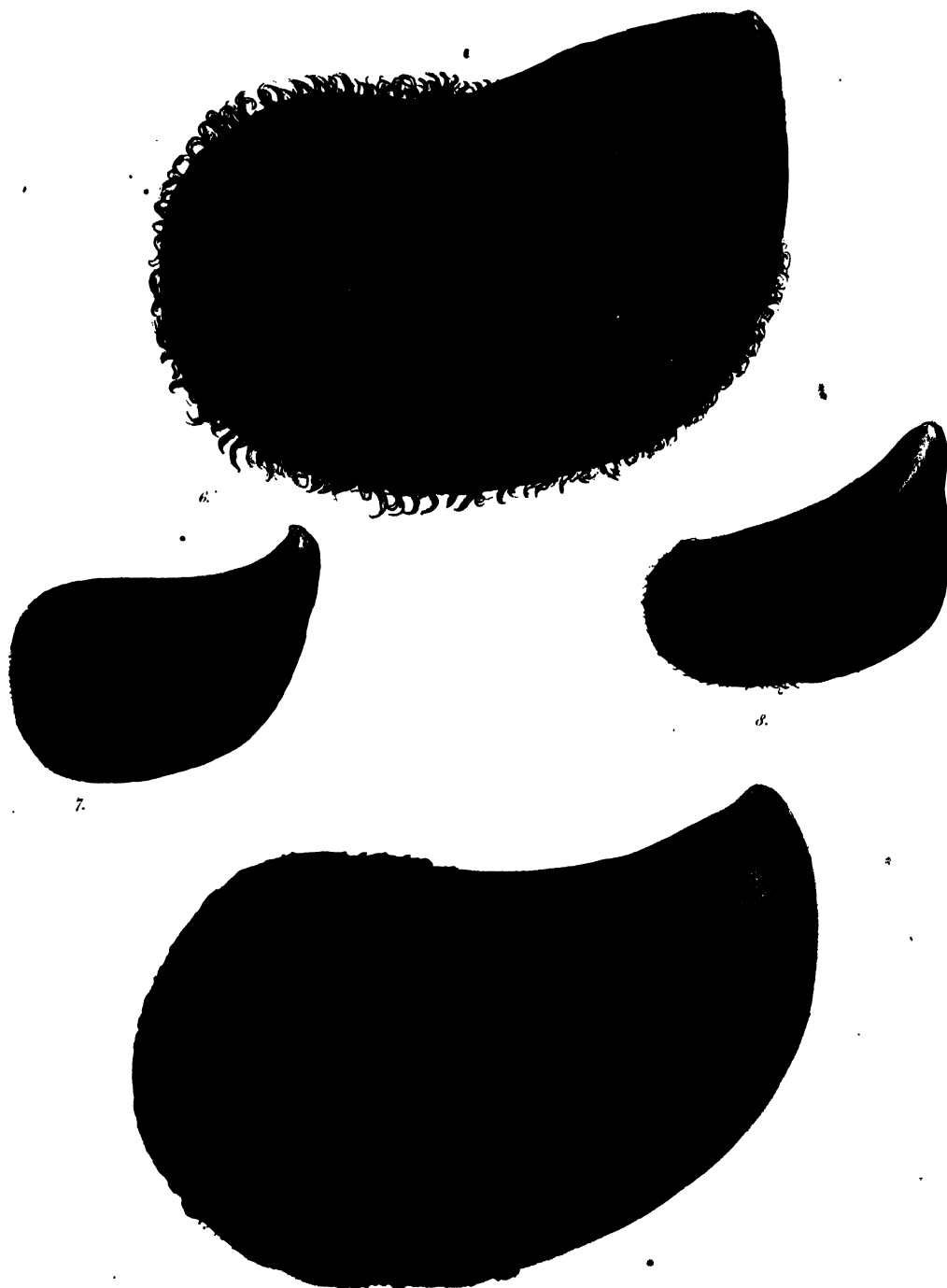
**THE COMPRESSED MYTILUS.** Shell oblong-ovate, compressed, concentrically irregularly striated, posterior side obtusely compressely angled; dark olive-chestnut.

Pl. MS., Mus. Cuming.

A simple compressed species, of a bright olive-chestnut, inclining at the margin to greenish-black.







# MYTILUS.

## PLATE III.

### Species 6. (Mus. Cuming.)

MYTILUS TORTUS. *Myt. testā pyriformi-ovalā, concentricè striatā, striis peculiariter obliquè decussatis, latere postico lato, peculiariter conforto; nitente-castaneā, epidermide fibrosā barbatā.*

THE TWISTED MYTILUS. Shell pyriformly ovate, concentrically striated, striæ obliquely decussated, posterior side broad, peculiarly distorted; shining-chestnut, bearded with a fibrous epidermis.

DUNCKER, Pro. Zool. Soc. 1856.

Hab. Island of Mindanao, Philippines; Cuming.

This fine species, with its handsome bearded epidermis, is peculiarly distinguished by its strangely twisted growth.

### Species 7. (Mus. Cuming.)

MYTILUS HAMATUS. *Myt. testā arcuato-pyriformi, subquadratā, anticè latè impressā, striis elevatis divaricatis validè sculptā; olivaceo-virente.*

THE HOOKED MYTILUS. Shell arcuately pyriform, somewhat square, anteriorly broadly impressed, strongly sculptured with divaricated raised striæ; olive-green.

SAY, Journ. Acad. Nat. Sci. vol. ii. p. 265. American Conchology, pl. 50.

*Mytilus striatus*, Baines.

Hab. Gulf of Mexico.

A shell of stout substance, sculptured throughout with very strongly developed thick-set divaricating ridges.

### Species 8. (Mus. Cuming.)

MYTILUS HIRSUTUS. *Myt. testā arcuato-oblongā, posticè*

*breviter obtusè angulatā, anticè latissimā et gibbosā, medio hlante, longitudinaliter densè elevato-striatā; nitente-castaneā, epidermide fibrosā barbatā.*

THE HAIRY MYTILUS. Shell arcuately oblong, posteriorly shortly obtusely angled, anteriorly very broad and gibbous, gaping in the middle, longitudinally densely elevated striated; shining-chestnut, bearded with a fibrous epidermis.

LAMARCK, Anim. sans vert. vol. vii. p. 38.

Hab. New Zealand.

Triangular, curved, and very gibbous on the posterior side, with the valves gaping rather largely for the passage of the byssus.

### Species 9. (Mus. Cuming.)

MYTILUS HORRIDUS. *Myt. testā pyriformi-ovalā, latere postico impresso-curvato, concentricè striatā, striis obliquè decussatis; nitente-castaneā, epidermide fibrosā barbatā.*

THE HORRID MYTILUS. Shell pyriformly ovate, posterior side impressly curved, concentrically striated, striæ obliquely decussated; bright-chestnut, bearded with a fibrous epidermis.

DUNCKER, Pro. Zool. Soc., 1856.

Hab. Cape Capricorn, North Australia; Macgillivray.

Very closely allied to *M. tortus*, figured above it, but of a more truly pyriform curve, and destitute of any indication of the curious posterior distortion which is constant in that species.

June, 1857.









10.



11.



12.



13.



14.

# MYTILUS.

## PLATE IV.

### Species 10. (Mus. Cuming.)

**MYTILUS EXUSTUS.** *Myt. testā oblongo-flabelliformi, antice compressā, longitudinaliter sulcatā et bifurcatim striatā, latere postico obtusè angulato; fuscā, ochraceo sæpè radiatā.*

**THE SCORCHED MYTILUS.** Shell oblong fan-shaped, anteriorly compressed, longitudinally grooved and bifurcately striated, posterior side obtusely angled; brown, often rayed with ochre.

LAMARCK, Anim. sans vert. vol. vii. p. 39.

Hab. West Indies.

A rather compressed, oblong fan-shaped species, strongly longitudinally striated, the striæ being here and there bifurcated, and inclined to pass off in the anterior direction. In colour the shell is mostly of a swarthy-brown, tinged and often rayed with ochre.

### Species 11. (Mus. Cuming.)

**MYTILUS ATROPURPUREUS.** *Myt. testā oblongā, tenuiculā, posticè tumidā, vix angulatā, longitudinaliter tenui-striatā, striis confertis, subundulatis; atro-purpureā.*

**THE DARK-PURPLE MYTILUS.** Shell oblong, rather thin, posteriorly swollen, scarcely angled, longitudinally finely striated, striæ close-set, slightly waved; black-purple.

DUNKER, MS. in Mus. Cuming.

Hab. Guinea; Dr. Tams.

Delicate in substance, very closely finely striated throughout, and of a rich dark-purple colour; collected by Dr. Tams at Guinea.

### Species 12. (Mus. Cuming.)

**MYTILUS LATUS.** *Myt. testā elongato-ovatā, concentricè irregulariter striatā, olivaceā, sub epidermide tenui corneā viridi vix decussatim radiatā; latere postico recto, obtusè declivi, antico arcuato, vix angulato.*

**THE BROAD MYTILUS.** Shell elongately ovate, concentrically irregularly striated, olive, decussated with rays of bright-green beneath a thin horny epidermis; posterior side straight, obtusely slanting, anterior arched, scarcely angled.

LAMARCK, Anim. sans vert. vol. vii. f. 41.

Hab. New Zealand.

Of a peculiar straight oblong form, swollen and bluntly sloping on the posterior side, which is straight at the margin, whilst the margin on the anterior side is only slightly angularly curved.

### Species 13. (Mus. Cuming.)

**MYTILUS EXCISUS.** *Myt. testā oblongo-ovatā, solidiusculā, curvatā, valdè gibbosā, longitudinaliter sulcatā et lirate, liris confertis, crenulatis, hic illic bifurcatim divergentibus, latere postico obtusè contracto, antico rotundato; albida, purpurascens-spadiæo tinclā.*

**THE ENGRAVED MYTILUS.** Shell oblong-ovate, rather solid, curved, very gibbous, longitudinally grooved and ridged, ridges close-set, crenulated, here and there bifurcately diverging, posterior side obtusely contracted, anterior rounded; whitish, tinged with purple-fawn.

*Tichogonia excisa*, Wiegman, Archives, 1837.

*Mytilus fuscus*, Recluz.

Hab. Madagascar.

Of very gibbous solid growth, with the diverging striæ enlarged into conspicuously crenulated ridges.

### Species 14. (Mus. Cuming.)

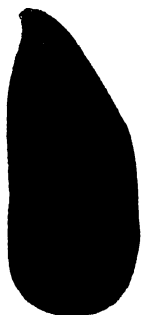
**MYTILUS OVALIS.** *Myt. testā oblongo-ovati, plus minus gibbosā, longitudinaliter lirate, liris parum crenulatis, undatis, subdistantibus, interstitiis versus marginem lirā alterā interveniente; umbonibus tumidiusculis, incumbens; nigro-purpureā, castaneo tinclā.*

**THE OVAL MYTILUS.** Shell oblong-oval, more or less gibbous, longitudinally ridged, ridges but little crenulated, waved, rather distant, interstices towards the margin with another ridge intervening; umboes rather swollen, incumbent; blackish-purple, stained with chestnut.

In this species, as Lamarck describes, the umboes are compressly incumbent, presenting a link with the typical growth of the umboes in *Modiola*. The sculpture consists of slightly waved radiating ridges, with an alternate ridge appearing in the interstices as they widen out towards the margin. The colour is blackish-purple, passing beneath the umboes into chestnut.



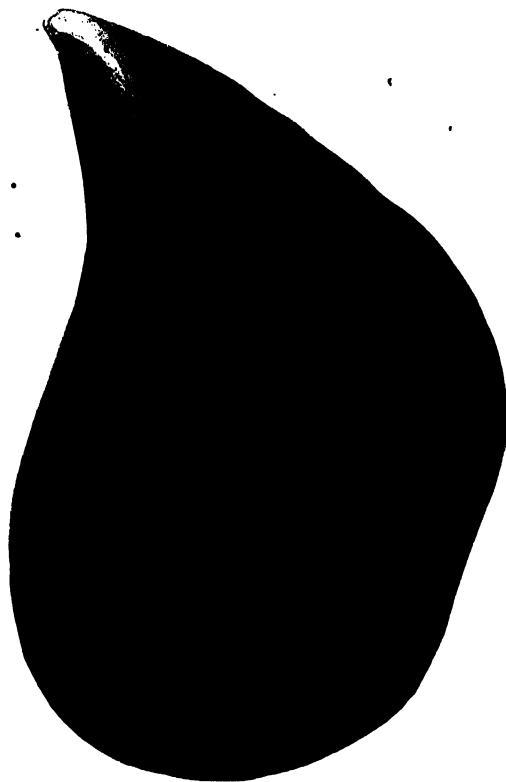




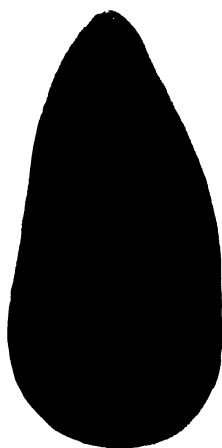
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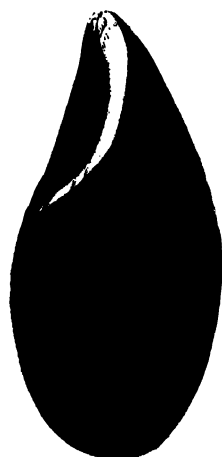
16.



17.



18.



# MYTILUS.

## PLATE V.

### Species 15. (Mus. Cuming.)

**MYTILUS ROSTRATUS.** *Myt. testā subelongatā, versus umbones attenuatā et rostratā, longitudinaliter tenuistriatā, striis undatis, hic illic obsolete, latere postico obtusè incurvo, antico rotundato; purpureo-nigrā.*

**THE BEAKED MYTILUS.** Shell rather elongated, attenuated towards the umboes and beaked, longitudinally finely striated, striae waved, here and there obsolete, posterior side obtusely incurved, anterior rounded; purple-black.

DUNKER, MS. in Mus. Cuming.

*Hab.* Tasmania.

Of rather elongated form, attenuated towards the umboes, which are produced into a sharp beak. The striae are very superficial. The colouring is very dark, only showing purple where bruised.

### Species 16. (Mus. Cuming.)

**MYTILUS SINUATUS.** *Myt. testā oblongo-flabelliformi, peculiariter arcuatā, obtusè gibbosā, levigatā, anticè concentricè striatā, latere postico multo incurvo, antico declivi-rotundato; nigricante-viridi, nigro obscure lentiginosā.*

**THE SINUATED MYTILUS.** Shell oblong fan-shaped, peculiarly arched, obtusely gibbous, smooth, anteriorly concentrically striated, posterior side much incurved, anterior slopingly rounded; very dark green, obscurely freckled with black.

DUNKER, MS. in Mus. Cuming.

*Hab.* Philippine Islands; Cuming.

Distinguished by its peculiarly arched gibbous growth, and dark green freckled colouring.

### Species 17. (Mus. Cuming.)

**MYTILUS DUNKERI.** *Myt. testā trigono-flabelliformi, posticè plano-incurvā et gibbosā, anticè declivi-compressā, versus umbones subangustè rostratā, radialiter superficialiter striatā, striis concentricis decussatā; nilente-atrā.*

**DUNKER'S MYTILUS.** Shell triangularly fan-shaped, posteriorly flatly incurved and gibbous, anteriorly slopingly compressed; towards the umboes rather narrowly beaked, radially superficially striated, decussated with concentric striae; shining black.

*Hab.* Philippine Islands.

I have the pleasure of naming this fine species after the intelligent naturalist of Cassel, who has worked with so much zeal on the specimens of *Mytilaceæ* in Mr. Cuming's cabinet. It is a shining black shell, of a conspicuous fan-shape, broadly gibbous and incurved, on the posterior side, with the umboes contracted and beaked.

### Species 18. (Mus. Cuming.)

**MYTILUS CUNEIFORMIS.** *Myt. testā elongato-oblongā, regulariter rotundato-trigonā, latere postico brevissimo, versus umbones peculiariter declivi-contorto, latere antico prælongo, compresso; levigatā, vel obsolete decussatim striatā; nilente-corned, intensè viridi, posticè luteo-caustanè.*

**THE WEDGE-SHAPED MYTILUS.** Shell elongately oblong, regularly rotundately triangular, posterior side very short, peculiarly slopingly twisted towards the umboes, anterior side very long, compressed; smooth or obsoletely decussately striated; shining horny, very dark green, posteriorly yellowish-chestnut.

*Hab.* Bay of Guayaquil (on mud-banks); Cuming.

Of a dark shining horny-green, passing on the posterior side into chestnut, with the interior delicately purple-stained. The curious posteriorly contorted attenuation of this shell near the umboes renders it easily recognized.

### Species 19. (Mus. Cuming.)

**MYTILUS PALLIO-PUNCTATUS.** *Myt. testā elongato-flabelliformi, solidā, gibbosā, versus umbones attenuato-rostratā, latere postico latè incurvo; intensè purpureo-nigrā.*

**THE MANTLE-DOTTED MYTILUS.** Shell elongately fan-shaped, solid, gibbous, attenuately beaked towards the umboes, posterior side broadly incurved; deep purple-black.

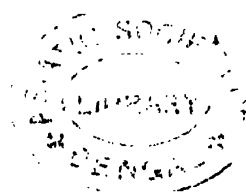
DUNKER, MS. in Mus. Cuming.

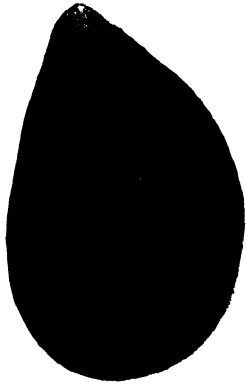
*Hab.* California and Mazatlan.

This species is always so much eroded it is not possible to describe the sculpture. It appears however to be developed originally in fine radiating striae. Mr. Carpenter describes it, in his Catalogue of the Reigen Collection in the British Museum, as being abundant at Mazatlan, and always similarly eroded.

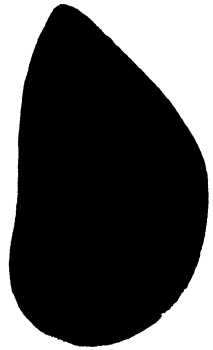


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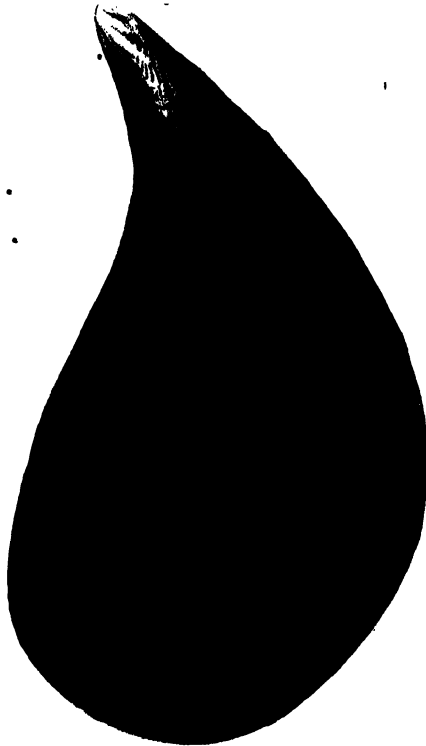




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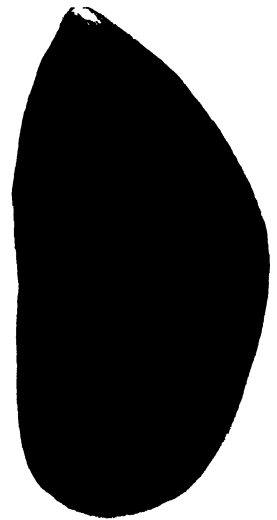
21.



22.



23.



24.

# MYTILUS.

## PLATE VI.

### Species 20. (Mus. Cuning.)

**MYTILUS NORRALIS.** *Myt. testā oblongo-ovata, subarcuata, tenui, imbricatula, lævigatā vel decussatim striatā, antica subplicatim corrugatā, umbonibus paulo divaricatis; umbones olivaceo-nigrā, ad umbones violaceā.*

**THE NORTHERN MYTILUS.** Shell oblong-ovate, somewhat arched, thin, rather swollen, smooth or decussately striated, faintly plicately wrinkled on the anterior side, umboes a little divaricated; shining olive-black, violet at the umboes.

LAMARCK, Anim. sans vert. vol. vii. p. 46.

*Hab.* Newfoundland.

A light, oval, swollen shell, of a dark shining olive-black colour, tinged with violet at the umboes, which are somewhat removed from each other.

### Species 21. (Mus. Cuming.)

**MYTILUS CHILOENSIS.** *Myt. testā oblongā, subflabelliformi, lævigatā aut minutè decussatim striatā, latere postico recto, antico subdepresso, ad marginem rotundato-angulato; luteo-olivaceā, versus marginem nilente-olivaceā, et obscurè radiatim lineatā.*

**THE CHILOE MYTILUS.** Shell oblong, somewhat fan-shaped, smooth, or minutely decussately striated, posterior side straight, anterior slightly depressed, rotundately angled at the margin; yellowish-olive, towards the margin shining olive, and obscurely radiately lineated.

PHILIPPI, Dunker, MS. in Mus. Cuming.

*Hab.* Island of Chiloe.

Of rather light substance, of a rich shining olive-colour, rayed with fine pencil lines.

(Mus. Cuming.)

**MYTILUS MAGELLANICUS.** *Myt. testā elongato-pyriformi,*

*compressiusculā, versus umbones arcuatim attenuatā, longitudinaliter radiatim costatā; costis undato-corrugatis et crenatis, interdum prope marginem obsolete; intense violaceo-nigrā.*

**THE MAGELLAN MYTILUS.** Shell elongately pear-shaped, rather compressed, arched and attenuated towards the umboes, longitudinally radiately ribbed, ribs wave-wrinkled and crenated, sometimes obsolete near the margin; deep violet-black.

CHEMNITZ, Conch. vol. viii. pl. 83. f. 742.

*Hab.* Straits of Magellan.

A very characteristic flattened pear-shaped shell, of a violet-black colour, covered with waved, wrinkle-like, crenated ribs.

### Species 23. (Mus. Cuning.)

**MYTILUS PERNA.** *Myt. testā angusto-elongatā, crassiusculā, versus umbones gibbā et posticè obtusè angulatā, lævigatā vel decussatim striatā; violascente, versus marginem intense viridi.*

**THE PERNA MYTILUS.** Shell narrowly elongated, rather thick, gibbous and posteriorly obtusely angled towards the umboes, smooth or decussately striated; violet, stained with dark green towards the margin.

*Mya Perna*, Linnæus, Syst. Nat. p. 1113.

*Mytilus elongatus*, Chemnitz.

*Hab.* Newfoundland.

Of a narrow elongated form and solid structure, gibbously obtusely angled towards the umboes on the posterior side.

### Fig. 24. (Mus. Cuming.)

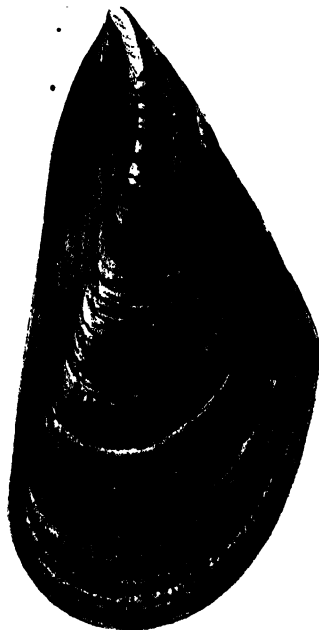
A fine example in an early stage of growth of *Mytilus latus* represented at Pl. IV. Fig. 12. It is only in this state that a characteristic dark horny band descending posteriorly from the umboes is seen.



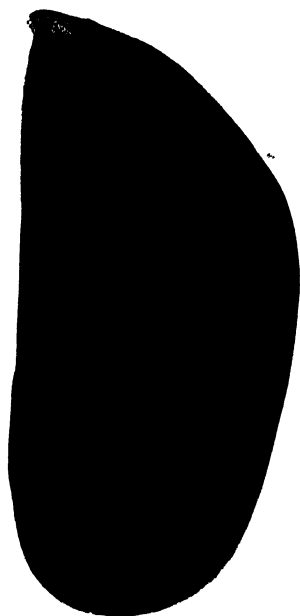




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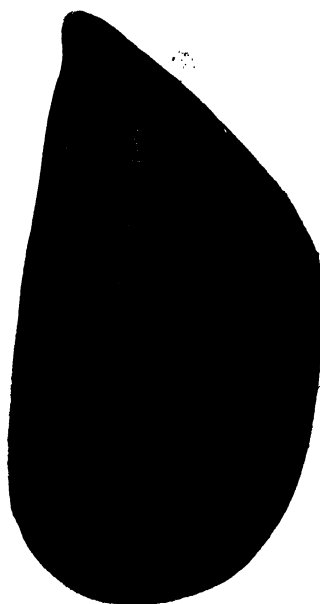


27.



28.

Sowerby del. & lith



29.

Vincent Brooks Imp.

# MYTILUS.

## PLATE VII.

### Species 25. (Mus. Cuming.)

MYTILUS CRASSUS. *Myt. testā elongato-flabelliformi, posticā arcuatā, latē gibbosā, undique radiatim undulato-striatā, striis crenulatis; intensē rufo-purpureā.*

THE THICK MYTILUS. Shell elongately fan-shaped, posteriorly arched, broadly gibbous, radiately wave-striated throughout, striae crenulated; deep reddish-purple.

*Septifer crassus*, Dunker.

*Hab.* — ?

A dark reddish-purple shell, wave-striated throughout, with a characteristic septum across the interior of the umbonal extremity of each valve, and which is regarded by authors as the type of a distinct genus, *Septifer*.

### Species 26. (Mus. Cuming.)

MYTILUS MENKEANUS. *Myt. testā subtrigono-elongatā, solidā, valdē gibbosā, radialim valdē corrugato-costatā, costis anticē divergentibus, arcū posticā latā, depressā, creberrimē crenulato-liriatā; nilentē luteo-castaneā, intus intensē purpureā.*

MENKE'S MYTILUS. Shell somewhat triangularly elongated, solid, very gibbous, radiately strongly wrinkle-ribbed, ribs diverging anteriorly, posterior area broad, depressed, very closely crenulately ridged; shining yellowish-chestnut, deep purple in the interior.

PHILIPPI, Dunker, MS. in Mus. Cuming.

*Hab.* New Holland.

The sculpture is curiously developed, on the same plan, but in three different degrees. The posterior, anterior, and middle areas present a striking contrast.

### Fig. 27. (Mus. Cuming.)

This shell, here figured and which Mr. Cuming possesses

as representing *Mytilus pictus*, Born, is identical with *M. Afer*, Gmelin, described at Plate II.

### Species 28. (Mus. Cuming.)

MYTILUS SMARAGDINUS. *Myt. testā elongato-oblongā, convexā, margine antico declivi-angulatā, levigatā aut decussatim striatā, latere postico subrecto, medio leviter arcuato; nigro-olivaceā, versus marginem violidē smaragdina.*

THE BRIGHT-GREEN MYTILUS. Shell elongately oblong, convex, slopingly angled at the anterior margin, smooth or decussately striated, posterior side nearly straight, slightly arched in the middle; very dark olive, bright-green towards the margin.

CHEMNITZ, Conch. Cab. vol. viii. pl. 83. f. 745.

*Mytilus opalinus*, Lamarck.

*Hab.* Borneo.

This well-known species, in an advanced stage of growth, with the epidermis more or less worn off or eroded, shows a pearly structure, and is in this state the *M. opalinus* of Lamarck.

### Species 29. (Mus. Cuming.)

MYTILUS GRUNERIANUS. *Myt. testā elongato-flabelliformi, posticē latē gibbosā, subrectā, anticē ad marginem declivi-arcuatā, levigatā, nilentē, concentricē corrugato-striatā; lutescente-spadicēā, ad marginem purpureo-nigrā, intus plumbeo-ceruleā.*

GRUNER'S MYTILUS. Shell elongately fan-shaped, anteriorly broadly gibbous, nearly straight, slopingly arched at the margin, smooth, shining, concentrically wrinkle-striated; yellowish-tawny, black at the margin, lead-blue in the interior.

DUNKER, MS. in Mus. Cuming.

*Hab.* Iceland.

A fine new species, of a peculiar richly coloured towards the margin with while the interior is of a dull leaden









# MYTILUS.

## PLATE VIII.

### Species 30. (Mus. Cuming.)

MYTILUS OBSCURUS. *Myt. testā subquadrato-oblongā, convexā, posticē haud impressā, concentricē striatā; albidā, sordidē olivaceo aut rufescente tinctā.*

THE OBSCURE MYTILUS. Shell somewhat squarely ob-  
oblong, convex, not impressed on the posterior side,  
concentrically striated; whitish, tinged with dull-  
olive or green.

DUNKER, Pro. Zool. Soc. 1856, p. 360.

Hab. Sydney.

Distinguished by an even convex growth, not impressed,  
as is commonly the case in this genus, on the posterior  
side.

### Species 31. (Mus. Cuming.)

MYTILUS OBUSUS. *Myt. testā elongato-ovatā, solidulā, versus umbones subangulato-attenuatā, rostratā, lavi-  
gatā, plus minus rudē erosā, obscurē divaricatim pli-  
catā; intense purpureo-atrā.*

THE STOUT MYTILUS. Shell elongately ovate, rather  
solid, somewhat angularly attenuated towards the  
umboes, beaked, smooth, more or less roughly eroded,  
obscurely divaricately plicated; deep purple-black.

DUNKER, MS. Mus. Cuming.

Hab. Van Diemen's Land; R. C. Gunn.

A shell of solid structure and rough purple-black sur-  
face obscurely divaricately waved with rude folds.

### Species 32. (Mus. Cuming.)

MYTILUS GRACILIS. *Myt. testā angustē elongatā, tenui, versus umbones attenuatē productā, posticē vix im-  
pressā, concentricē densē striatā; albidā, epidermide corneā olivaceā et intense cæruleo-viridi indutā.*

THE SLENDER MYTILUS. Shell narrowly elongated, thin,  
attenuately produced towards the umboes, posteriorly  
but little impressed, concentrically densely striated;  
whitish, covered with an olive and dark blue-green  
epidermis.

Hab. Mexico.

Distinguished in a conspicuous degree by its narrowly  
elongated form.

### Species 33. (Fig. a, b, Mus. Cuming.)

MYTILUS EDULIS. *Myt. testā obliquē trigonā, concentricē striatā, cærulescente-nigrā, vel olivaceā nigro-radiatā, posticē subcompressā, anticē arcuatim impressā.*

THE EDIBLE MYTILUS. Shell obliquely triangular, con-  
centrically striated, blue-black or olive, rayed with  
black, rather compressed posteriorly, anteriorly arcu-  
ately impressed.

LINNÆUS, Syst. Nat. (12th edit.) p. 1157.

*Mytilus pellucidus*, Pennant.

*Mytilus incurvatus*, Pennant.

*Mytilus vulgaris*, Da Costa.

*Mytilus flavus*, Poli.

*Mytilus sagittatus*, Poli.

*Mytilus abbreviatus*, Lamarck.

*Mytilus retusus*, Lamarck.

*Mytilus hesperianus*, Lamarck.

*Mytilus dilatatus*, Gray.

*Mytilus subazatilis*, Williamson.

Hab. North Atlantic shores.

The numerous synonyms annexed to this well-known  
species, evidence in a striking degree the many variations  
it assumes under different circumstances of habitation.

### Fig. 34. (Mus. Cuming.)

This fine shell proves to be a dark full-grown variety of  
*M. latus*, represented at Plate IV.

### Species 35. (Mus. Cuming.)

MYTILUS PILOSUS. *Myt. testā latē trigonā, versus um-  
bones valdē gibbosā, posticē concavo-impressā, undique  
fortiter liratā, liris granulato-serratis; luteo-olivaceā,  
sparsim pilosā.*

THE HAIRY MYTILUS. Shell broadly triangular, very  
gibbous towards the umboes, posteriorly concavely  
impressed, everywhere strongly ridged, ridges granu-  
larly serrated, yellowish-olive, sparingly hairy.

RECLUZ, MS. in Mus. Cuming.

Hab. —?

A broadly triangular shell, very gibbous and contracted  
towards the umboes, the surface being densely serrately  
ridged throughout, covered with a yellowish-olive horny  
epidermis, bearded with rather distant bristly hairs.







Species 36. (Mus. Cuming.)

MYTILUS ANGUSTANUS. *Myt. testā angustē oblongā, gibbosiusculā, umbonibus subcontractis, tumidis, margaritaceis, levibus, extremitate concentricē striatā, fulvo-fusca, rotundatā.*

THE NARROW MYTILUS. Shell narrowly oblong, rather gibbous, umboes somewhat contracted, swollen, pearly, smooth, extremity concentrically striated, fulvous-brown, rounded.

LAMARCK, Anim. sans vert. vol. vii. p. 46.

Hab. Valparaiso.

Distinguished by its narrow prolonged growth, partaking somewhat of *Modiola* in form.

Species 37. (Mus. Cuming.)

MYTILUS TENCISTRIATUS. *Myt. testā trigono-oblongā, subcurvatā, posticā gibbosā, anticā compressē angulatā, radiatim densē striatā, striis medio plus minus obsoletis; olivaceo-fusca, circa umbones albā, purpurascens lineatā.*

THE FINELY-STRIATED MYTILUS. Shell triangularly oblong, rather curved, posteriorly gibbous, anteriorly compressly angled, radiately densely striated, striae more or less obsolete in the middle; olive-brown, white, tinged with purple around the umboes.

DUNKER, MS. Mus. Cuming.

Hab. — ?

A shell of light substance, purple-brown in colour, closely rayed with striae, which commence on the umboes, and then become obsolete, reappearing more strongly developed at the margin.

Species 38. (Mus. Cuming.)

MYTILUS MORRISI. *Myt. testā angustē curvatā, versus umbones gibbosā, posticē peculiariter concavā, undique radiatim sulcatā, liris angustis, hic illic bifurcatis; cæruleo-nigrā.*

MORRIS'S MYTILUS. Shell narrowly curved, gibbous towards the umboes, posteriorly peculiarly concave, everywhere radiately grooved, ridges narrow, here and there bifurcated; blue-black.

DUNKER, Pro. Zool. Soc. 1856, p. 360.

Hab. Guinea.

A narrow, peculiarly curved shell, bifurcately grooved and ridged after the manner of *M. Nicobaricus*.

Species 39. (Mus. Cuming.)

MYTILUS GALLOPROVINCIALIS. *Myt. testā oblongā, ticā subdepressā, gibbosā, anticā compressē di-undique lavi, cæruleo-nigrā, nitente.*

THE PROVENCE MYTILUS. Shell oblong, posteriorly rather depressed, gibbous, anteriorly compressly dilated, everywhere smooth, shining, blue-black.

LAMARCK, Anim. sans vert. vol. vii. p. 46.

Hab. Shores of Provence, Mediterranean.

This species may be nothing more than a local modification of *M. edulis*; it is, however, peculiarly compressly dilated on the anterior side.

Fig. 40. (Mus. Cuming.)

The shell here represented, *Mytilus Kraussii*, Kuster, is a characteristic orange-red variety of *M. Nicobaricus*, of which species the dark bronze-green state, described and figured at Sp. 42, is the type.

Species 41. (Mus. Cuming.)

MYTILUS BIFURCATUS. *Myt. testā trigono-ovata, posticē depressā, valdē gibbosā, undique latē conspicuē sulcatā, sulcis hic illic bifurcatis, liris obtusē granulatis; intense cæruleo-nigrā.*

THE BIFURCATED MYTILUS. Shell triangularly ovate, posteriorly depressed, very gibbous, everywhere conspicuously grooved, grooves here and there bifurcated, ridges obtusely granuled; deep blue-black.

CONRAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vii. pl.

241.

A very strongly grooved species, of a dark indigo blue-black colour.

Species 42. (Mus. Cuming.)

MYTILUS NICOBARICUS. *Myt. testā subquadrato-oblongā, crassiusculā, posticē latē concavo-depressā, valdē gibbosā, ad umbones rostratā, anticē flexuoso-compressā, undique densē sulcatā, liris granulato-serratis, hic illic bifurcatis; intense cæruleo-viridi.*

THE NICOBAR MYTILUS. Shell somewhat squarely oblong, rather thick, posteriorly broadly concavely depressed, very gibbous, beaked at the umboes, anteriorly flexuoso-compressed, everywhere densely grooved, the ridges being granulately serrated, and here and there bifurcated; deep blue-green.

CHEMNITZ, Conch. Cab. vol. viii. p. 155-157. pl. 82. f. 736 a, b, and 737 nos. 2 and 3.

*Mytilus bilocularis*, Lamarck.

*Tichogonia bilocularis*, Wiegman.

*Septifer bilocularis*, Dunker.

Hab. Eastern Archipelago,

A characteristic densely-grooved species, of dark bronze-green colour, chambered within the umboes.







*Mytilus. Pl.*



alb.

# MYTILUS.

## PLATE X.

### Species 43. (Mus. Cuming.)

MYTILUS AMERICANUS. *Myt. testâ trigono-oratâ, tenui, convexâ, concentricè striatâ; olivaceâ, subsericeâ.*

THE AMERICAN MYTILUS. Shell triangularly ovate, thin, convex, concentrically striated; olive, somewhat silky.

*Dreissena Americana*, Recluz, MS. in Mus. Cuming.

*Hab.* Florida.

A delicate silky olive shell, of thin substance, rather convex.

### Species 44. (Mus. Cuming.)

MYTILUS SALLEI. *Myt. testâ trigono-flabellatâ, curvatâ, posticè impressâ, umbonibus acutè rostratis; sordidè fuscis, strigis nigricantibus remotis concentricè pictâ.*

SALLE'S MYTILUS. Shell triangularly fan-shaped, curved, posteriorly impressed, umboes sharply beaked; pale dirty-brown, concentrically painted with distant blackish streaks.

*Dreissena Salléi*, Recluz, Revue de Zool. 1849, p. 69; Journ. de Conch. vol. iii. p. 255. pl. 10. f. 9.

*Hab.* Central America.

Of a curiously curved fan-shape, impressly nipped beneath the umboes in a manner to render them sharply beaked.

### Species 45. (Mus. Cuming.)

MYTILUS ROSSMASSLERI. *Myt. testâ trigono-flabellatâ, subcurvatâ, solidiusculâ, posticè latè impressâ, gibbosâ, albidâ, epidermide tenui fuscescente concentricè floculatâ.*

ROSSMASSLER'S MYTILUS. Shell triangularly fan-shaped, somewhat curved, rather solid, posteriorly broadly impressed, gibbous; whitish, concentrically flaked with a thin light-brown epidermis.

*Dreissena Rossmassleri*, Dunker, MS. in Mus. Cuming.

*Hab.* United States.

Chiefly distinguished by its broadly impressed gibbous growth on the posterior side, and characteristic epidermis, which consists only of thin concentric flakes.

### Species 46. (Mus. Cuming.)

MYTILUS TENEBROSUS. *Myt. testâ elongatâ, posticè valdè gibbosâ, latissimâ, plano-impressâ, ad angulum acutâ; cærulescente-albâ, nigro concentricè strigatâ, epidermide fibrosâ olivaceo-nigricante indulatâ.*

THE DARK MYTILUS. Shell elongated, posteriorly very gibbous, very broad, flatly impressed, sharp at the angle; bluish-white, concentrically streaked with black, covered with an olive-black fibrous epidermis.

*Dreissena Cumingiana*, Recluz, MS. in Mus. Cuming.

*Hab.* Mississippi.

Of elongated form, remarkably gibbous, and broadly flatly impressed on the posterior side.

### Species 47. (Mus. Cuming.)

MYTILUS AFRICANUS. *Myt. testâ subelongatâ, posticè rix impressâ; sordidè fuscâ, epidermide fibrosâ concentricè indulatâ.*

THE AFRICAN MYTILUS. Shell rather elongated, posteriorly scarcely impressed; dirty-brown, concentrically invested with a fibrous epidermis.

*Dreissena Africana*, Van Beneden, Ann. de Sci. Nat. 1835.

*Hab.* Senegal.

The peculiarity of this species consists in its simple convexly elongated form, the posterior side showing scarcely any of the depression commonly typical of the *Dreissena* group.

### Species 48. (Mus. Cuming.)

MYTILUS DOMINGENSIS. *Myt. testâ elongatâ, subcurvatâ, versus umbones attenuatâ et rostratâ, posticè subimpressâ; purpureo-fuscâ, subnulè concentricè striatâ.*

THE DOMINGO MYTILUS. Shell elongated, slightly curved, attenuated and beaked towards the umboes, faintly impressed posteriorly; purple-brown, somewhat rudely concentrically striated.

*Dreissena Domingensis*, Recluz, Journ. de Conch. vol. iii. p. 255. pl. 10. f. 8.

*Hab.* St. Domingo; Sallé.

Characterized by a peculiar attenuately beaked contour in the direction of the umboes.

MYTILUS.—PLATE X.

Species 49. (Mus. Cuming.)

MYTILUS POLYMORPHUS. *Myt. testā trigono-trapezoidē, posticē valdē gibbosā, latissimē concavo-impressā, ad angulum acutā, concentricē striatā; luteā, strigis acutē undatis olivaceis concentricē variegatā.*

THE MANY-SHAPED MYTILUS. Shell triangularly trapezoid, posteriorly very gibbous, very broadly concavely impressed, sharp at the angle, concentrically striated; yellow, concentrically variegated with zigzag olive streaks.

PALLAS, It. Russ. vol. i. p. 478; Chemn. Conch. Cab. vol. xi. p. 256. pl. 205, pl. 2028.

*Mytilus Hagenii*, De Baer.

*Mytilus arca*, Kickx.

*Dreissena polymorpha*, Vanbeneden.

Hab. Rivers of Northern Europe.

This well-known species is distinguished from all others of the *Dreissena* group by its extreme trapezoidal form and variegated painting.

Species 50. (Mus. Cuming.)

MYTILUS COCHLEATUS. *Myt. testā elongato-oblongā, an-*

*ticē subangulatā, posticē impressā, concentricē striatā; sordidē fuscescente, purpureo concentricē strigatā.*

THE SPOON-SHAPED MYTILUS. Shell elongately oblong, anteriorly slightly angled, posteriorly impressed, concentrically striated; dirty light-brown, concentrically streaked with purple.

*Dreissena cochleata*, Kickx, Dunker, MS. in Mus. Cuming.  
Hab. ——?

Of a rather oblong-produced form, streaked with a characteristic pattern of concentric purple bands.

Species 51. (Mus. Cuming.)

MYTILUS MORCHIANUS. *Myt. testā trigonā, subcurvatā, posticē subimpressā, umboibus rostratis; erosu-alba, epidermide lutescente fibrosā partim indutā.*

MORCH'S MYTILUS. Shell triangular, slightly curved, posteriorly faintly impressed, umboes beaked; eroded white, partially covered with a yellowish fibrous epidermis.

*Dreissena Morchiana*, Dunker.

Hab. Island of St. Thomas, West Indies.

Of paler substance than usual in the *Dreissena* group more or less invested with a yellowish fibrous epidermis.





# MYTILUS.

## PLATE XL

### Species 52. (Mus. Cuming.)

MYTILUS CUMINGIANUS. *Myt. testâ trigono-flabellatâ, valde gibbosâ, posticè latè subconcavo-impressâ, undique radiatim densè granoso-liratâ, liris versùs marginem plus minus dichotomis; pellucido-lutescente, rufo et rivicè virescente variegatâ.*

CUMING'S MYTILUS. Shell triangularly fan-shaped, very gibbous, posteriorly broadly somewhat concavely impressed, radiately densely granosely ridged throughout, ridges more or less dichotomous towards the margin; transparent-yellow, variegated with red and bright-green.

RECLIZ, MS. in Mus. Cuming.

Hab. Panama.

A convex gibbously-compressed shell, prettily variegated with red or bright-green upon a light semitransparent ground.

### Species 53. (Mus. Cuming.)

MYTILUS CURVATUS. *Myt. testâ subtrigona, solidulâ, valde arcuatâ, posticè peculiariter impressâ, umbonibus subrostratis; fusco-corneâ, costulis dichotomis radiatâ.*

THE CURVED MYTILUS. Shell somewhat triangular, rather solid, very much arched, posteriorly peculiarly impressed, umboes rather beaked; brownish-horny, rayed with fine dichotomous ribs.

DUNKER, Pro. Zool. Soc. 1856.

Hab. Island of Luzon, Philippines; Cuming.

A short curved shell, curiously compressed, or pinched, as it were, beneath the umboes in the vicinity of the byssal orifice.

### Species 54. (Mus. Cuming.)

MYTILUS LAVALLEANUS. *Myt. testâ oblongâ, Modioli-formi, valde gibbosâ et tumidâ, latere postico subtilis impresso, radiatim obsolete sulcatâ; castaneo-fuscâ.*

LAVALLE'S MYTILUS. Shell oblong, Modiola-shaped, very gibbous and swollen, posterior side impressed beneath, radiately obsoletely grooved; chestnut-brown.

D'ORRIGNY, Moll. de Cuba.

Hab. Cuba.

A short, swollen, gibbous species, partaking very much of the character of *Modiola*.

### Species 55. (Mus. Cuming.)

MYTILUS ADAMSIANUS. *Myt. testâ ovato-trigona, valde gibbosâ, posticè plano-compressâ, ad umbones attenuato-rostratâ, anticè flabellatâ, undique nitidè flexuoso-costellatâ, costellis granulato-serratis, versùs marginem dichotomis; olivaceâ, nigro lineatâ.*

ADAMS'S MYTILUS. Shell ovately triangular, very gibbous, posteriorly flatly compressed, attenuately beaked at the umboes, fan-shaped anteriorly, everywhere neatly flexuously ribbed, ribs granularly serrated, dichotomous towards the margin; olive, tinged with black.

DUNKER, Pro. Zool. Soc. 1856, p. 360.

Hab. Panama; Cuming.

A very pretty species, rayed throughout with finely serrated flexuous dichotomous riblets.

### Species 56. (Mus. Cuming.)

MYTILUS MINIMUS. *Myt. testâ trigono-oblongâ, posticè gibbosâ et concavo-impressâ, utrinque subacutè angulatâ, densè concentricè striatâ; albidâ, fusco-purpureo lineatâ.*

THE VERY SMALL MYTILUS. Shell triangularly oblong, posteriorly gibbous and concavely impressed, rather sharply angled on each side, densely concentrically striated; whitish, stained with fuscous-purple.

POLY, Test. utr. Sicil. vol. ii. pl. 32. f. 1.

Hab. Mediterranean.

An unusually sharply-angled species, densely concentrically striated, and darkly stained with fuscous-purple.

### Species 57. (Mus. Cuming.)

MYTILUS CURTUS. *Myt. testâ trigono-oblongâ, subcurvatâ, posticè obtusè gibbosâ, impressâ, undique radiatim granoso-liratâ; olivaceo-luteâ.*

THE COUCH MYTILUS. Shell triangularly oblong, somewhat curved, posteriorly obtusely gibbous, impressed, radiately granularly ridged; olive-yellow.

SAY, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 263.



# MYTILUS.—PLATE XI.

*Hab.* — ?

Of simple, rather gibbous form, granularly ridged throughout.

## Species 58. (Mus. Cuming.)

MYTILUS CHARPENTIERI. *Myt. testā oblongā, peculiari-ter gibbosissimā, posticē concavo-impressā et obtusē angulatā, undiquē dense flexuoso-liratā; fusco-luteā.*

CHARPENTIER'S MYTILUS. Shell oblong, peculiarly very gibbous, posteriorly concavely impressed and obtusely angled, densely flexuously ridged throughout; fuscous-yellow.

DUNKER, MS. in Mus. Cuming.

*Hab.* Guinea.

A densely-ridged fuscous-yellow species, remarkable for its extremely gibbous growth.

## Species 59. (Mus. Cuming.)

MYTILUS USTULATUS. *Myt. testā angustē oblongā, gibbosā, posticē impressā, versus umbones subattenuatā, radiatim liratā, liris subdistantibus, flexuosis; albidā, nigricante-fusco tinctā.*

THE SCORCHED MYTILUS. Shell narrowly oblong, gibbous, posteriorly impressed, rather attenuated towards the umbones, radiately ridged, ridges rather distant, flexuous; whitish, stained with blackish-brown.

LAMARCK, Anim. sans vert. vol. vii. p. 40.

*Hab.* Borneo.

Of rather narrow contracted growth, rayed with flexuous ridges, which are rather more than commonly distant.

## Species 60. (Mus. Cuming.)

MYTILUS GLOMERATUS. *Myt. testā oblongo-ovatā, subobliquā, concentricē rudē rugosā; intensē cæruleo-nigrā*

THE GROUPED MYTILUS. Shell oblong-ovate, rather oblique, concentrically rudely wrinkled; deep blue-black.

GOULD, MS. in Mus. Cuming.

*Hab.* — ?

Named *glo veratus* from its habit of attaching itself in such dense clusters.

## Species 61. (Mus. Cuming.)

MYTILUS GRANULATUS. *Myt. testā oblongā, gibbosissimā, posticē concavo-impressā, radiatim liratā, liris conspicuē granulatīs; olivaceo-luteā.*

THE GRANULATED MYTILUS. Shell oblong, very gibbous, posteriorly concavely impressed, radiately ridged, ridges conspicuously granulated; olive-yellow.

HANLEY, Recent Bivalve Shells, p. 246.

*Hab.* South America.

This shell partakes so much of the form and colour of *M. Charpentieri*, that it would seem to be a variety of that species. It is however remarkable for its very defined granulated sculpture.

# MYTILUS.

	Plate.	Species.		Plate.	Species.
<i>abbreviatus</i> , Lamarck	VIII.	33	<i>hirsutus</i> , Lamarck	III.	8
<i>Adamsianus</i> , Dunker	XI.	55	<i>horridus</i> , Dunker	III.	9
<i>Afer</i> , Gmelin	II.	3	<i>incurvatus</i> , Pennant	VIII.	33
<i>Africanus</i> , Chemnitz	II.	3	<i>Kraussii</i> , Kuster	IX.	40
<i>Africanus</i> ( <i>Dreissena</i> ), Vanbencken.	X.	47	<i>latus</i> , Lamarck	IV.	12
<i>Americanus</i> ( <i>Dreissena</i> ), Recluz	X.	43	<i>Lavalleanus</i> , D'Orbigny	XI.	54
<i>atropurpureus</i> , Dunker	IV.	11	<i>Magellanicus</i> , Chemnitz	VI.	22
<i>angustus</i> , Philippi	IX.	36	<i>Menckanus</i> , Philippi	VII.	26
<i>bifurcatus</i> , Conrad	IX.	41	<i>minimus</i> , Poli	XI.	56
<i>bilocularis</i> , Lamarck	IX.	42	<i>Morchianus</i> ( <i>Dreissena</i> ), Recluz	X.	51
<i>borealis</i> , Lamarck	VI.	20	<i>Morrisi</i> , Dunker	IX.	38
<i>Californianus</i> , Conrad	I.	2	<i>Nicobaricus</i> , Chemnitz	IX.	42
<i>Charpentieri</i> , Dunker	XI.	58	<i>obesus</i> , Dunker	VIII.	31
<i>Chiloensis</i> , Philippi	VI.	21	<i>obscurus</i> , Dunker	VIII.	30
<i>cochleatus</i> ( <i>Dreissena</i> ), Kickz	X.	50	<i>opalinus</i> , Lamarck	VII.	28
<i>compressus</i> , Philippi	II.	5	<i>ovalis</i> , Lamarck	IV.	14
<i>crassus</i> ( <i>Septifer</i> ), Dunker	VII.	25	<i>pallio-punctatus</i> , Dunker	V.	19
<i>cubitus</i> , Say	XI.	57	<i>pellucidus</i> , Pennant	VIII.	33
<i>Cumingianus</i> , Recluz	XI.	52	<i>Perna</i> ( <i>Mya</i> ), Linnaeus	VI.	23
<i>cuneiformis</i> , Reeve	V.	18	<i>pilosus</i> , Recluz	VIII.	35
<i>curvatus</i> , Dunker	XI.	53	<i>polymorphus</i> , Pallas	X.	49
<i>dilatatus</i> , Gray	VIII.	33	<i>retusus</i> , Lamarck	VIII.	33
<i>Domingensis</i> ( <i>Dreissena</i> ), Recluz	X.	48	<i>Rossmasleri</i> ( <i>Dreissena</i> ), Recluz	X.	45
<i>Dunkeri</i> , Reeve	V.	17	<i>rostratus</i> , Dunker	V.	15
<i>edulis</i> , Linnaeus	VIII.	33	<i>sagittatus</i> , Poli	VIII.	33
<i>elongatus</i> , Chemnitz	VI.	23	<i>Sallei</i> ( <i>Dreissena</i> ), Recluz	X.	44
<i>excisus</i> ( <i>Tichogonia</i> ), Wiegman	IV.	13	<i>sinuatus</i> , Dunker	V.	16
<i>exustus</i> , Lamarck	IV.	10	<i>smaragdinus</i> , Chemnitz	VII.	28
<i>flavus</i> , Poli	VIII.	33	<i>striatus</i> , Baines	III.	7
<i>Gallo-provincialis</i>	IX.	39	<i>subsaxatilis</i> , Williamson	VIII.	33
<i>glomeratus</i> , Gould	XI.	60	<i>tenebrosus</i> , Reeve	X.	46
<i>gracilis</i> , Reeve	VIII.	32	<i>tenuistriatus</i> , Dunker	IX.	37
<i>granulatus</i> , Hanley	XI.	61	<i>tortus</i> , Dunker	III.	6
<i>Gruenerianus</i> , Dunker	VII.	29	<i>ungulatus</i> , Linnaeus	II.	4
<i>Hagenii</i> , De Baer	X.	49	<i>ustulatus</i> , Lamarck	XI.	59
<i>hamatus</i> , Say	III.	7	<i>vulgaris</i> , Da Costa	VIII.	33
<i>hesperianus</i> , Lamarck	VIII.	33			



# MONOGRAPH

OF THE GENUS

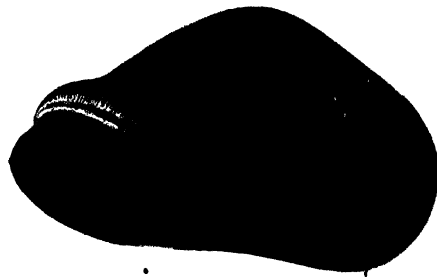
# M O D I O L A.

“Fame is the spur that the clear spirit doth raise  
(That last infirmity of noble minds)  
To scorn delights, and live laborious days.”—*Milton*.

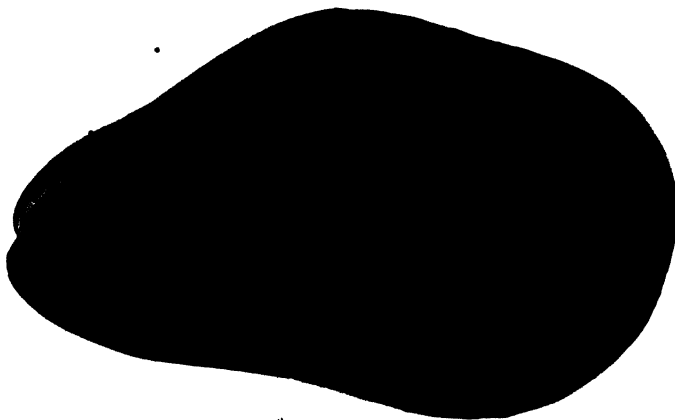




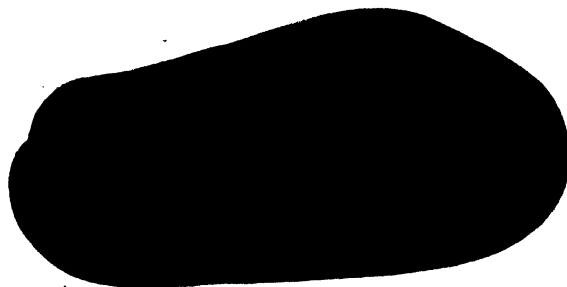
*Modiola, Pl. I.*



1.



2.



Vincent Brooks Inc.

Sowerby del. et lith

# MODIOLA.

## PLATE I.

### Genus MODIOLA, Lamarck.

*Testa oblonga, æqualis, plus minus ventricosa, umbonibus parvis, tumidiusculis, haud terminalibus, latere antico sæpe expanso, postico arcuato, contracto. Cardo linearis, ligamento marginali, subinterno. Impressio muscularis composita, sublateralis.*

Shell oblong, equalvalve, more or less ventricose, with the umboes small, rather swollen, not terminal, anterior side often expanded, posterior arched, contracted. Hinge linear, with the ligament marginal and partially internal. Muscular impression compound, sublateral.

The typical distinction between *Mytilus* and *Modiola* consists in the latter having a lighter and more cylindrically oblong shell, with the umboes rounder and not terminal, in consequence of the posterior extremity of the shell protruding beyond them. This generic form is, however, subject to more decided variation than *Mytilus*, and excellent subdivisions have been established under the names *Modiolarea*, *Orenella* or *Lanistina*.

*Modiola* is somewhat more numerous in species than *Mytilus*, omitting even the *Lithodomi*, which form an extremely characteristic group, and they are often beautifully painted while less sculptured. Their range of habitation is equally widely spread.

### Species 1. (Mus. Cuming.)

**MODIOLA PHILIPPINARUM.** *Mod. testa oblongo-trapeziformi, ventricosa, antice subexpansa, concentricè dense filo-striatâ; pallide castanea, luteo-radiatâ.*

**THE PHILIPPINE MODIOLA.** Shell oblong-trapeziform, ventricose, anteriorly somewhat expanded, concentrically densely thread-striated; light-chestnut, yellow-rayed.

HANLEY, Recent Bivalve Shells, p. 235.

*Hab.* Philippine Islands.

This interesting species, from the Philippine Islands, has very much the typical form of the European *M. mo-*

*diolus*. It is neatly ornamented throughout with raised thread-like striae, but they exist apparently only in the epidermis.

### Species 2. (Mus. Cuming.)

**MODIOLA MODIOLUS.** *Mod. testâ oblongâ, subtrapeziformi, versus umbones ventricosâ, levigatâ vel obsolete corrugato-striatâ; intense castaneâ.*

**THE BUSHEL MODIOLA.** Shell oblong, somewhat trapeziform, ventricose towards the umboes, smooth or obsoletely wrinkle-striated; dark-chestnut.

*Mytilus modiolus*, Linnaeus, Syst. Nat. p. 1158.

*Mytilus umbilicatus*, Pennant.

*Mytilus curtus*, Pennant.

*Mytilus curvirostratus*, Da Costa.

*Modiola Papuana*, Lamarck.

*Modiola modiolus*, Turton.

*Modiola vulgaris*, Fleming.

*Hab.* North Atlantic shores of Europe and America.

This, the largest species of the genus, well known on our own shores, is common throughout the whole of Northern Europe and America.

### Species 3. (Mus. Cuming.)

**MODIOLA VAGINA.** *Mod. testâ cylindrævo-oblongâ, rectâ, tenui, subdepressâ, concentricè dense subtilissimè striatâ, radiatim lineari-striatâ et obsolete undato-corrugatâ; nitente-castaneâ.*

**THE SHEATH MODIOLA.** Shell cylindrically oblong, straight, thin, rather depressed, concentrically densely very finely striated, radiately linearly striated and obsoletely wave-wrinkled; shining-chestnut.

LAMARCK, Anim. sans vert. vol. vii. p. 22.

*Mytilus arenarius*, Rumphius?

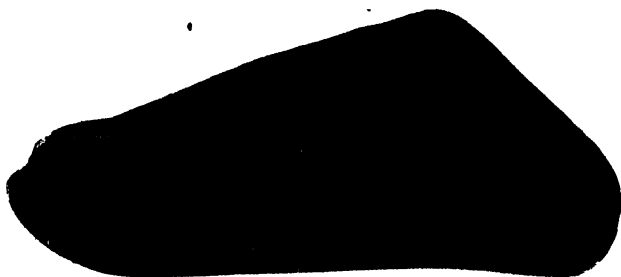
*Hab.* Philippine Islands; Cuming.

A peculiarly straight, cylindrically oblong species, of slight substance, with a delicate silky surface of a shining-chestnut colour.

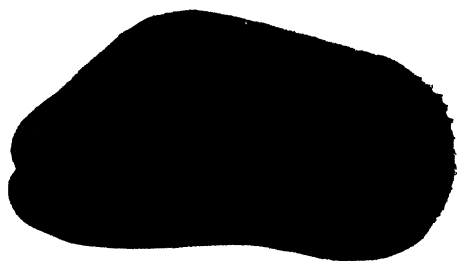




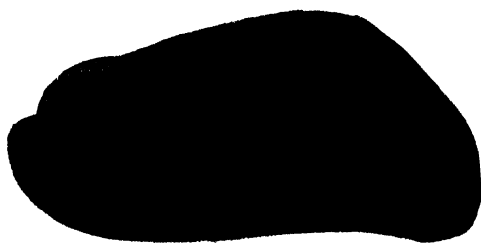




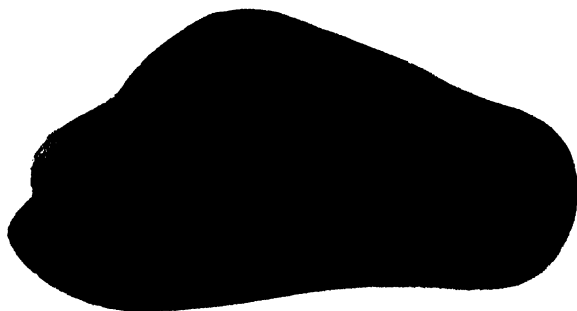
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# MODIOLA.

## PLATE II.

### Species 4. (Mus. Cuming.)

MODIOLA ELONGATA. *Mod. testâ elongato-trapeziformi, subangustâ, tenui, latere postico subimpresso-arcuato, antico carinato-producto; nitenti-castaneâ, olivaceo-luteo tinctâ, undique concentricè striatâ.*

THE ELONGATED MODIOLA. Shell elongately trapeziform, rather narrow, thin, posterior side rather impressly arched, anterior produced into a compressed keel; shining chestnut, stained with olive-yellow, concentrically striated throughout.

SWAINSON, Exotic Conchology, Second Edition, p. 31. f. 8.  
*Hab.* Moluccas.

A delicate glossy fulvous-chestnut shell, of light substance, elegantly produced in form.

### Fig. 5. (Mus. Cuming.)

This fine shell proves on examination to be a specimen of very advanced growth of *M. tulipa*, described at Pl. IV.

### Species 6. (Mus. Cuming.)

MODIOLA NITIDA. *Mod. testâ elongato-oblongâ, subcurvatâ, tenuiculâ, tumidâ, concentricè striatâ, nitente-castaneâ, fulvo tinctâ, latere postico recto, antico versus extremitatem sulfabelliformi.*

THE SHINING MODIOLA. Shell elongately oblong, some-

what curved, rather thin, swollen, concentrically striated, shining-chestnut, fulvous-tinged, posterior side straight, anterior a little fan-shaped towards the extremity.

*Hab.* Port Essington, New Holland.

This pretty glossy species resembles *M. elongata*, but more foreshortened, with the anterior side less produced into a keel.

### Species 7. (Mus. Cuming.)

MODIOLA ALBICOSTA. *Mod. testâ subtrigono-oblongâ, solidiusculâ, valde tumidâ, latere postico subimpresso-arcuato, antico supernè producto, quasi alato; intense castaneâ, obscure fulvo-radiatâ.*

THE WHITE-RIBBED MODIOLA. Shell somewhat triangularly oblong, rather solid, very much swollen, posterior side rather impressly arched, anterior side produced at the upper part, as if winged; dark-chestnut, obscurely fulvous-rayed.

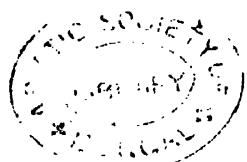
LAMARCK, Anim. sans vert. vol. vii. p. 19.

*Hab.* Tasmania.

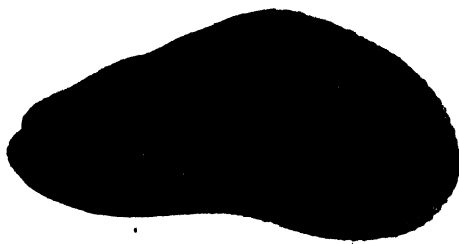
We are indebted to the beautiful work of M. Delessert for being able to identify this species. The character which suggested to Lamarck the name "white-ribbed" arose apparently from the epidermis being worn off the prominent central ridge of the shell.

August, 1857.





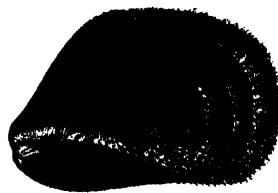
*Modiola, Pl III.*



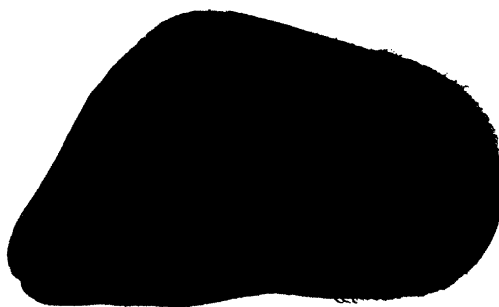
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Vincent Pricks

Sowerby del & lith.

# MODIOLA.

## PLATE III.

Species 8. (Mus. Cuming.)

**MODIOLA PLICATULA.** *Mod. testâ subtrigono-oblongâ, posticè impresso-curvâtâ, anticè longitudinaliter productâ et flabellatim dilatâtâ, undique densè sulcatâ, liris, intermediis subplanulatis, castaneo-nigrâ, olivaceo-luteo tinctâ.*

**THE PPLICATED MODIOLA.** Shell somewhat triangularly oblong, posteriorly impressly curved, anteriorly longitudinally produced and fan-like dilated, everywhere closely grooved, the intermediate ridges being rather flat, chestnut-black, tinged with olive-yellow.

LAMARCK, Anim. sans vert. vol. vii. p. 22.

*Mytilus demissus*, Dillwyn.

*Mytilus plicatulus*, Deshayes.

*Hab.* United States.

An oblong gibbous species, closely sculptured throughout with flattened ridges, excavately grooved in the interstices.

Species 9. (Fig. 9 and 10, Mus. Cuming.)

**MODIOLA BARBATA.** *Mod. testâ trigono-flabelliformi, subcompressâ, concentricè nitidè filo-striatâ, vividè castaneâ, pilis setaceis versus marginem densè barbatâ.*

**THE BEARDED MODIOLA.** Shell triangularly fan-shaped, rather compressed, concentrically neatly thread-striated, bright chestnut, densely bearded towards the margin with bristly hairs.

LAMARCK, Anim. sans vert. vol. vii. p. 22.

*Mytilus barbatus*, Linnaeus.

*Mytilus modiolus*, Brooks.

*Hab.* Seas of Europe.

A fan-shaped compressed species, partaking very much of the character of *Mytilus*, densely covered with a stiff bristly beard.

Species 11. (Mus. Cuming.)

**MODIOLA CAPAX.** *Mod. testâ oblongâ, subarcuatâ, posticè latè impressâ, valdè gibbosâ, anticè declivi-compressâ, margine superne obtusè angulato; intensè castaneâ, versus marginem pilis setaceis sparsim barbatâ.*

**THE SPACIOUS MODIOLA.** Shell oblong, slightly arched, posteriorly broadly impressed, very gibbous, anteriorly slopingly compressed, margin obtusely angled towards the upper part; dark chestnut, sparingly bearded towards the margin with bristly hairs.

CONRAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vii. p. 242.

*Hab.* Galapagos Islands; Cuming. California; Nuttall. Mazatlan; Carpenter.

This chiefly differs from the preceding species in having more the typical form of the genus, more oblong and gibbous, with the anterior margin more slopingly produced. It appears also to be less densely bearded.







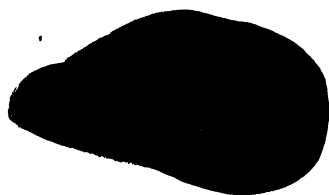




13



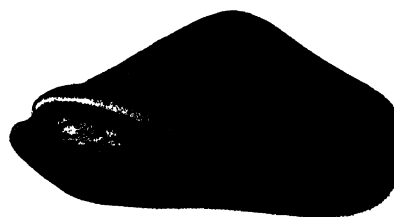
13a



14



16a



16b



17

# MODIOLA.

## PLATE IV.

### Species 12. (Mus. Cuming.)

**MODIOLA ARATA.** *Mod. testâ cylindraceo-oblongâ, subangustâ, rotundato-gibbosâ, tenuiculâ, fulvo-castaneâ, undique nitidè concentricè filo-striatâ, latere postico contracto, antico carinato-producto, ad extremitatem declivi-angulato.*

**THE FURROWED MODIOLA.** Shell cylindrically oblong, rather narrow, rotundately gibbous, rather thin, fulvous-chestnut, neatly concentrically thread-striated throughout, posterior side contracted, anterior produced into a keel, which is slopingly angled at the extremity.

DUNKER, MS. in Mus. Cuming.

*Hab.* North Australia.

This interesting species is characterized by the horny epidermis, forming a beautiful concentric series of raised striae.

### Species 13. (Fig. 13 and 14, Mus. Cuming.)

**MODIOLA TRAILLII.** *Mod. testâ oblongo-flabelliformi, subrudè concentricè striatâ, latere postico plano-impresso, latissimè gibboso, antico declivi-compresso, interdum margine angulato-producto; vividè castaneâ.*

**TRAILL'S MODIOLA.** Shell oblong fan-shaped, rather roughly concentrically striated, posterior side flatly impressed, very gibbous, anterior side slopingly compressed, sometimes angularly produced at the margin; bright chestnut.

*Hab.* Malacca; Dr. Traill.

Remarkable for the very gibbous development of the posterior side of the shell.

### Species 15. (Mus. Cuming.)

**MODIOLA TULIPA.** *Mod. testâ oblongâ, tenuiculâ, ventricosâ, latere postico subcontracto, antico declivi-producto, undique subtilissimè concentricè striatâ; aurantio-lutescè, rufo-castaneo plus minus radiatâ.*

**THE TULIP MODIOLA.** Shell oblong, rather thin, ventricose, posterior side somewhat contracted, anterior slopingly produced, everywhere very finely concentrically striated; orange-yellow, more or less rayed with reddish-chestnut.

LAMARCK, *Anim. sans vert.* vol. vii., p. 18.

*Hab.* West Indies.

Generally distinguished by its prettily-rayed painting,

which, however, as in the specimen figured at Pl. II. Fig. 5, becomes more obscure with age.

### Species 16. (Fig. a, b, Mus. Cuming.)

**MODIOLA METCALFEI.** *Mod. testâ subtrigono-oblongâ, angustâ, ventricosâ, lævigatâ aut subtilissimè striatâ, latere postico recto, paulo coarctato, antico in alam compressam angulato-producto; luteo-castaneâ, fuscâ cæruleo-purpureascente ab umbone radiatim descendente; interdum epidermide pilosâ versus marginem indutâ.*

**METCALFE'S MODIOLA.** Shell somewhat triangularly oblong, narrow, ventricose, smooth or very finely striated, posterior side straight, a little contracted, anterior angularly produced into a compressed wing; yellowish-chestnut, with a bluish-purple band, radiately descending from the umbo; sometimes covered towards the margin with a hairy epidermis.

HANLEY, *Proc. Zool. Soc.*, 1844; *Cat. Recent Bivalve Shells*, p. 235.

*Hab.* Philippine Islands; Cuming.

The elegant keel-winged form of this shell is peculiar, but its chief characteristic is the presence of a conspicuous broad purple band, radiating from each umbo.

### Species 17. (Mus. Cuming.)

**MODIOLA BRASILIENSIS.** *Mod. testâ trigono-flabelliformi, latere postico subcontracto, lævigato vel subtilissimè striato, antico carinato, deinde latè dilatato, et concentricè filo-striato; areâ posticâ fulvo-castaneâ, anticâ vividè ærugineo-viridi, punctis et lineis flexuosis minutis lentiginosâ.*

**THE BRAZILIAN MODIOLA.** Shell triangularly fan-shaped, posterior side somewhat contracted, smooth or very finely striated, anterior keeled, then broadly dilated, and concentrically thread-striated; posterior area fulvous-chestnut, anterior bright metallic-green, freckled with dots and minute flexuous lines.

CHEMNITZ, *Conch. Cab.* vol. ii. pl. 205. f. 2020 and 2021.

*Modiola Guyanensis*, Lamarck.

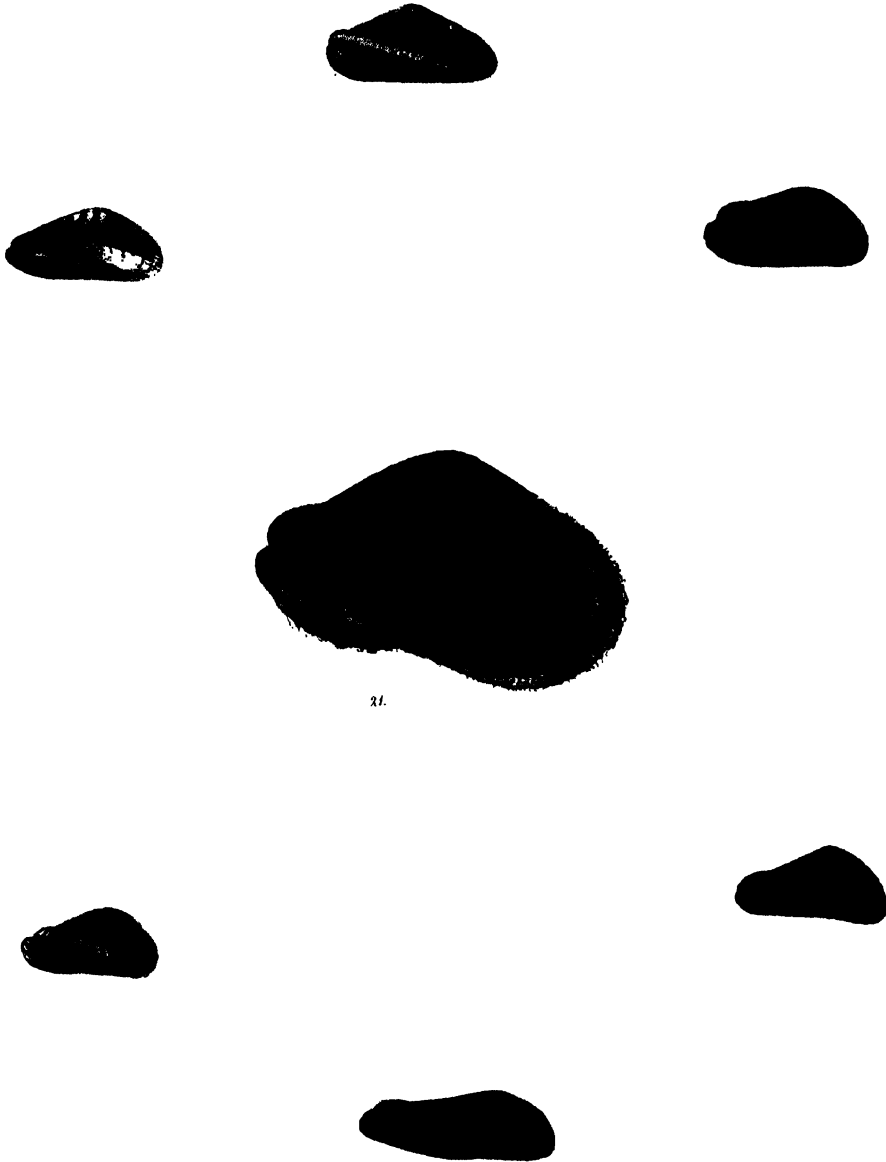
*Modiola semifusca*, Sowerby.

*Hab.* Brazil.

This very pretty species may be readily distinguished by its striking contrast of colour, the posterior area being a glossy fulvous-chestnut, almost smooth, while the posterior is a bright pale metallic-green, with the striae raised in thread-like ridges.







21.

# MÓDIOLA.

## PLATE V.

### Species 18. (Mus. Cuming.)

**MODIOLA UNDULATA.** *Mod. testā oblongā, gibbosā, tenui, latere postico rotundato, antico subflabelliformi, medio obtusè angulatā, ad angulum subobscurè plicato-corrugatā; lutescente-fuscā, nitente.*

**THE WAVED MODIOLA.** Shell oblong, gibbous, thin, posterior side rounded, anterior somewhat fan-shaped, obtusely angled in the middle, rather obscurely plicately wrinkled; yellowish-brown, shining.

*Volsella undulata*, Dunker, Pro. Zool. Soc. 1856, p. 363.

*Hab.* Moluccas.

A thin, shining, yellowish-brown shell, in which the angular ridge, descending from the umboes, is faintly swollen with waved folds.

### Species 19. (Mus. Cuming.)

**MODIOLA ELEGANS.** *Mod. testā oblongā, tenui, lævigatā, latere postico brevissimo, convexo, antico subflabellatim dilatato; pellucido-virescente, anticè purpureo tinctā et transversim undulatā.*

**THE ELEGANT MODIOLA.** Shell oblong, thin, smooth, posterior side very short, convex, anterior somewhat fan-like dilated; transparent-greenish, stained and transversely waved anteriorly with purple.

GRAY, Spicilegia Zoologica, pl. 6. f. 14.

*Modiola inconstans*, Dunker.

*Hab.* Gambia, West Africa.

A delicate transparent green shell, rayed with irregular rose lines, crossed concentrically with purple-waved bands.

### Species 20. (Mus. Cuming.)

**MODIOLA SETIGERA.** *Mod. testā oblongā, gibbosā, densè radiatim liratā, liris ad latus posticum fasciā latā lævigatā nitente interruptā; albidā, epidermide olivaceo-luteā indutā, anticè setigerā.*

**THE BRISTLY MODIOLA.** Shell oblong, gibbous, densely rayed with ridges, ridges interrupted on the posterior side with a broad, smooth, shining band; whitish, covered with an olive-yellow epidermis, bristled anteriorly.

*Volsella setigera*, Dunker, Pro. Zool. Soc. 1856, p. 364.

*Hab.* — ?

Rayed throughout with close-set ridges and grooves, rather gibbous in form, finely bristled anteriorly.

### Species 21. (Mus. Cuming.)

**MODIOLA AUSTRALIS.** *Mod. testā ovato-flabelliformi, latere postico brevissimo, antico latè dilatato, medio convexā, concentricè striatā; luteo-castaneā, ad marginem sparsim barbatā.*

**THE AUSTRALIAN MODIOLA.** Shell ovately fan-shaped, posterior side very short, anterior broadly dilated, convex in the middle, concentrically striated; yellowish-chestnut, sparingly bearded towards the margin.

GRAY, Appendix to King's Voyage.

*Hab.* North Australia; Jukes.

Remarkable for the very short contracted growth of the posterior side, and convexly dilated form anteriorly.

### Species 22. (Mus. Cuming.)

**MODIOLA SENHAUSII.** *Mod. testā suboblongo-flabelliformi, lævigatā, tenui, latere postico brevi, subattenuato, antico compressè dilatato; albā, rosaceo radiatā et transversim undulatā sub epidermide tenui lutescente pellucidā.*

**SENHAUS'S MODIOLA.** Shell somewhat oblong fan-shaped, smooth, thin, posterior side short, rather attenuated, anterior compressly dilated; white, rayed and transversely waved with pale rose beneath a thin yellowish transparent epidermis.

*Hab.* Chusan; Captain Benson.

*Sens. - A.M. 11*

An extremely delicate species, most beautifully sculptured and coloured.

### Species 23. (Fig. 23 and 24, Mus. Cuming.)

**MODIOLA NITENS.** *Mod. testā elongato-trapeziformi, angulatā, posticè attenuato-lumidā, validè gibboso-distortā, angulatā; intense virescente-olivaceā, nitente.*

**THE SHINING MODIOLA.** Shell elongately trapeziform, narrow, attenuately tumid posteriorly, gibbously distorted, angled; dark greenish-olive, shining.

CARPENTER, Cat. Reigen Coll. in Brit. Mus.

*Hab.* California.

A dark, greenish-olive, narrow, boat-shaped shell, with the posterior sides curiously gibbously distorted.









25.



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27.



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31.

# MODIOLA.

• PLATE VI.

## Species 25. (Mus. Cuming.)

**MODIOLA PLICATA.** *Mod. testā oblongo-naviformi, tenuiculā, latere postico brevi, tumidiusculo, rotundato, liris brevibus subdistantibus rugato, antico compressè dilatato, margine angulato-producto; subpellucidā, epidermide tenui corneā olivaceo-castaneā nitente intulā.*

**THE Plicated MODIOLA.** Shell oblong-boat-shaped, rather thin, posterior side short, rather swollen, rounded, wrinkled with rather distant short ridges, anterior side compressly dilated, angularly produced at the margin; semitransparent, covered with a shining, olive-chestnut, horny epidermis.

LAMARCK, Anim. sans vert. vol. vii. p. 25.

*Mytilus plicatus*, Gmelin.

*Hab.* West Africa.

A very light, broad, rather compressed shell, delicately plicately wrinkled.

## Species 26. (Mus. Cuming.)

**MODIOLA JAPONICA.** *Mod. testā cylindraceo-oblongā, angustā, tenui, lateribus rotundatis, postico brevissimo, attenuato; pellucido-virescente, roseo-purpureo concentricè undatā.*

**THE JAPAN MODIOLA.** Shell cylindrically oblong, narrow, sides rounded, posterior very short, attenuated; transparent green, concentrically waved with rose-purple.

*Costella Japonica*, Dunker, Pro. Zool. Soc. 1856, p. 363.

*Hab.* Japan.

A slender shell, very elegantly painted.

## Species 27. (Mus. Cuming.)

**MODIOLA ARCUATULA.** *Mod. testā arcuato-elongatā, subangustā, medio validè gibboso-angulato, latere postico parvo, antico sublabelato; pellucido-corneā, purpureo irregulariter undatā.*

**THE ARCHED MODIOLA.** Shell arcuately elongated, rather narrow, strongly gibbously angled in the middle, posterior side small, anterior somewhat fan-shaped; transparent horny, irregularly waved with purple.

HANLEY, Pro. Zool. Soc. 1844.

*Modiola varicosa*, Gould.

*Hab.* Singapore and Philippine Islands.

Chiefly distinguished by its arched form and gibbously angled growth. The painting consists of purple vein-like stains of irregular pattern, upon a semitransparent horny ground.

## Fig. 28. (Mus. Cuming.)

**MODIOLA RHOMBOIDEA.** *Mod. testā elongato-rhomboidē, tenuiculā, latere postico brevi, rotundato, antico valdè elongato, margine compressè angulato; nitente luteo-castaneā, posticè obscure saturatè fasciatā.*

**THE RHOMBOID MODIOLA.** Shell elongately rhomboid, rather thin, posterior side short, rounded, anterior very elongated, compressly angled at the margin; shining yellowish-chestnut, obscurely darker banded on the posterior side.

HANLEY, Species Recent Shells.

*Hab.* The Gambia, West Africa.

An elegantly-formed species of very simple character, beyond the concentric lines of growth inclining to become corrugated on the median angular ridge and beneath the umbones.

## Fig. 29. (Mus. Cuming.)

The specimen here figured is a fine characteristic example of *M. elegans*, represented in the preceding Plate.

## Species 30. (Mus. Cuming.)

**MODIOLA ARBORESCENS.** *Mod. testā subcylindraceo-oblongā, tenui, compressè convexā, lævigatā, lateribus rotundatis; lutescente-albā, ferrugineo-tinctā, anticè lineis tenuibus nigricantibus irregulariter dense divaricatum reticulatā.*

**THE ARBORESCENT MODIOLA.** Shell somewhat cylindrically oblong, thin, compressly convex, smooth, sides rounded; yellowish-white, stained with rust, anteriorly irregularly densely divaricately netted with fine blackish lines.

*Mytilus arborescens*, Chemnitz, Conch. Cab. vol. ii. pl. 198. f. 2016-17.

*Modiola picta*, Lamarck.

*Hab.* West Indies.

Peculiarly distinguished by its arborescent pattern of network on the anterior side.

## Fig. 31. (Mus. Cuming.)

This dark-coloured shell, tinged on the anterior side with bronze-green, is the typical *M. Brasiliensis* from Brazil. The light-coloured specimen represented at Pl. IV. Fig. 17, is a variety from Guayaquil.







32.



33.



35.



37.



38.

# MODIOLA.

## PLATE VII.

### Species 32. (Mus. Cuming.)

**MODIOLA GUBERNACULUM.** *Mod. testā subquadrato-oblongā, arcuatā, latere postico brevissimo, subprostrato, antico latē flabelliformi, undique densē concentricē striatā; lutescente, radiis linearibus livido-cæruleis pictā, versus marginem fusco tinctā.*

**THE RUDDER MODIOLA.** Shell somewhat squarely oblong, curved, posterior side very short, somewhat beaked, anterior broadly fan-shaped, densely concentrically striated throughout; yellowish, painted with livid-blue linear rays, stained with brown towards the margin.

*Volsella gubernaculum*, Dunker, Pro. Zool. Soc. 1856, p. 361.

*Hab.* —?

Partaking very much of the typical character of *Mytilus*, and especially distinguished by its painting of livid-blue linear rays upon a yellowish ground.

### Species 33. (Mus. Cuming.)

**MODIOLA STRIGATA.** *Mod. testā subelongatā, tenui, gibbosā, posticē attenuatā, anticē subangustē productā, lævigatā, viridi eximie tinctā et variegatā.*

**THE STREAKED MODIOLA.** Shell somewhat elongated, thin, gibbous, posteriorly attenuated, anteriorly rather narrowly produced, smooth, prettily stained and variegated with green.

*Mytilus strigatus*, Hanley, Pro. Zool. Soc. 1844.

*Hab.* Philippine Islands.

A thin shell, of rather narrow gibbous growth, prettily painted with rich green, which, on the anterior side, is disposed in oblique bands.

### Species 34. (Mus. Cuming.)

**MODIOLA TRISTIS.** *Mod. testā subelongatā, tenui, posticē trigono-attenuatā, anticē reclinatā, compressā, lævigatā; fulvo-castaneā, nitente.*

**THE SAD MODIOLA.** Shell somewhat elongated, thin, posteriorly triangularly attenuated, anteriorly straight, compressed, smooth; fulvous-chestnut, shining.

*Volsella tristis*, Dunker, Pro. Zool. Soc. 1856, p. 362.

*Hab.* Chusan; Capt. Benson.

A light shell, of semitransparent substance, remarkable for its straightly-produced *Volsella*-like growth anteriorly.

### Species 35. (Mus. Cuming.)

**MODIOLA SPECIOSA.** *Mod. testā longissimā, rectā, latere postico brevi, rotundato, parum gibboso, antico elongato, gradatim latiore, medio obliquē obtusē angulato; pellucido-albā, epidermide corneā deciduā, posticē fulvā, anticē smaragdina indulā, intus margaritaceā.*

**THE BEAUTIFUL MODIOLA.** Shell very long, straight, posterior side short, rounded, but little gibbous, anterior elongated, gradually broader, obliquely obtusely angled in the middle, covered with a deciduous horny epidermis, which is fulvous on the posterior area and bright green anteriorly, interior pearly.

*Volsella speciosa*, Dunker MS. in Mus. Cuming.

*Hab.* Tumbez, Peru; Cuming.

A very rare and beautiful species, remarkable for its elongated form and richly-coloured horny epidermis.

### Fig. 36. (Mus. Cuming.)

This shell proves to be the young of *M. nitida*, represented at Plate II. The anterior slope of the shell is characterized by a peculiar rippled structure.

### Species 37. (Mus. Cuming.)

**MODIOLA SPLENDENS.** *Mod. testā oblongo-ovalā, tenuiculā, utrinque rotundatā, latere postico gibboso, undique lævigatā, nitente, vel minutissimē decussatim striatā; fulvā et intense brunneā, partim iridescente-viridi.*

**THE SPLENDID MODIOLA.** Shell oblong-ovate, rather thin, rounded at both ends, posterior side gibbous, smooth throughout, shining, or very minutely decussately striated; fulvous and dark-brown, partially iridescent-green.

*Mytilus splendens*, Dunker, Pro. Zool. Soc. 1856, p. 359.

*Hab.* Peru.



# MODIOLA.—PLATE VII.

A shining, horny shell, the surface being elegantly clouded with brown and fulvous intermixed with iridescent green.

Species 38. (Mus. Cuming.)

MODIOLA RECTA. *Mod. testâ elongatâ, medio obliquè gibboso-angulatâ, latere postico peculiariter compressè producto, antico subalæformi; albidâ, epidermide cornâ fulvâ nitente, anticè sparsim pilosâ indutâ, posticè latè fusco-fasciatâ.*

THE STRAIGHT MODIOLA. Shell elongated, obliquely

gibbously angled in the middle, posterior side peculiarly compressly produced, anterior somewhat wing-shaped; whitish, covered with a shining horny epidermis, fulvous and sparsely hairy anteriorly, broadly brown-banded posteriorly.

CONRAD, Journ. Acad. Nat. Sci. Philadelphia, vol. vii. p. 245. pl. 19. f. 1.

Hab. — ?

Distinguished by a strict peculiarity of form, the posterior side being curiously compressly produced, whilst the anterior side is wing-shaped, like some of the *Avicule*.





39.



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47.



# MODIOLA.

## PLATE VIII.

### Species 39. (Mus. Cuming.)

**MODIOLA OPIFEX.** *Mod. testâ oblongo-cuneiformi, gibbosâ, radiatim sulcosâ, latere postico brevissimo, antico angulato-attenuato; castaneo-cornedâ, nitente, versus extremitatem anticam rudè setigerâ.*

**THE ARTIFICE MODIOLA.** Shell oblong wedge-shaped, gibbous, radiately grooved, posterior side very short, anterior angularly attenuated; chestnut-horny, shining, rudely bristled towards the anterior extremity.

SAY, Journ. Acad. Nat. Sci. Philadelphia, vol. iv. p. 369.  
*Hab.* Rio Janeiro.

Unlike most *Modiolar*, this species is attenuated anteriorly, broadly gibbous, and roughly clothed at the extremity with an epidermis of bristly hairs.

### Species 40. (Mus. Cuming.)

**MODIOLA VEXILLUM.** *Mod. testâ subtrigono-flabelliformi, tenui, pellucidâ, latere postico subgibboso, antico angulato-expanso; flavescente, olivaceo-viridi, nitidè undulatum pictâ.*

**THE FLAG MODIOLA.** Shell somewhat triangularly fan-shaped, thin, transparent, posterior side rather gibbous, anterior angularly expanded; yellowish, neatly painted with waves of olive-green.

*Folsella picta*, Dunker (not *M. picta*, Lamarck).  
*Hab.* Australia.

Of thin, transparent substance, prettily variegated with concentric dark-green zigzag waves.

### Species 41. (Mus. Cuming.)

**MODIOLA MAGELLANICA.** *Mod. testâ oblongo-trapezoidâ, posticè gibbosâ, anticè subexpansâ, undique radiatim sulcatâ; fulvescente.*

**THE MAGELLAN MODIOLA.** Shell oblong-trapezoid, posteriorly gibbous, anteriorly rather expanded, radiately grooved throughout; light fulvous.

*Folsella Magellanica*, Dunker MS. in Mus. Cuming.  
*Hab.* Straits of Magellan.

Of a light fulvous colour, rayed throughout with close-set longitudinal grooves.

### Species 42. (Mus. Cuming.)

**MODIOLA PERFRAGILIS.** *Mod. testâ elongatâ, tenui, unâque minutissimè decussatim striatâ, striis posticis longitudinalibus incisâ, extremitate posticâ parvâ, rotundatâ, anticâ obliquâ; pellucido-albâ, nitente, virescente tinctâ.*

**THE VERY FRAGILE MODIOLA.** Shell elongated, thin, very minutely decussately striated, posterior longitudinal, striae engraved, posterior end small, rounded, anterior rather oblique; transparent-white, shining, tinged with pale-green.

*Folsella perfragilis*, Dunker, Pro. Zool. Soc. 1856, p. 362.

*Hab.* Moluccas.

In substance this shell\* is very thin, transparent-white, tinged with sea-green, and on examination with a lens, the surface will be found to be minutely decussately sculptured, the longitudinal striae being impressly engraved.

### Species 43. (Mus. Cuming.)

**MODIOLA SUBRAMOSA.** *Mod. testâ subtrigono-oblongâ, tenui, semipellucidâ, concentricè tenuistriatâ, radiatim ramoso-liriatâ, liris obtusis, subflexuosis, latere postico parvo, gibboso, antico trigono-flabelliformi; lutescente, purpureo-rufo tinctâ.*

**THE BRANCHED MODIOLA.** Shell somewhat triangularly oblong, thin, semitransparent, concentrically finely striated, radiately branch-ridged, ridges somewhat flexuous, posterior side small, gibbous, anterior triangularly fan-shaped; yellowish, stained with purple-red.

HANLEY, Pro. Zool. Soc. 1844, p. 14.

*Hab.* Island of Mindanao, Philippines; Cuming.

A somewhat fragile shell, neatly rayed with obtuse ridges, which branch off in a flexuous manner, particularly in the anterior direction.

### Species 44. (Mus. Cuming.)

**MODIOLA SUBPURPUREA.** *Mod. testâ elongatâ, subarctatâ, tenniculâ, gibbosâ, lævigatâ, latere postico obtusè rotundato, antico compressè producto; nitente-olivaceâ, subpurpureâ.*

**THE PURPLISH MODIOLA.** Shell elongated, somewhat

MODIOLA.—PLATE VIII.

arched, rather thin, gibbous, smooth, posterior side obtusely rounded, anterior compressly produced, shining-olive, tinged with purple.

*Volsella subpurpurea*, Dunker, Pro. Zool. Soc. 1856, p. 362.

*Hab.* Senegal.

Of a somewhat horny substance, and dark shining purplish-olive colour.

Fig. 45. (Mus. Cuming.)

A full-grown specimen of *M. arcuatula*, described at Plate VI. Fig. 27.

Species 46. (Mus. Cuming.)

MODIOLA PETAGNÆ. *Mod. testā elongatā, tenuissimā, posticē longitudinaliter striatā, nilente-corneā, anticē concentricē striatā, pulchrē iridescente-æruginosā, lineis rufescentibus undique pallidē reticulatā.*

PETAGNÆ'S MODIOLA. Shell elongated, very thin, posteriorly longitudinally striated, shining horny, anteriorly concentrically striated, beautifully iridescent-verdigris, faintly reticulated throughout with reddish lines.

SCACCHI, Phil. Enum. Moll. Sicil. vol. ii. p. 51.

*Hab.* Mediterranean, and Galveston, Texas.

A beautifully delicate transparent shell, having the posterior side horny and shining, while the anterior is of a delicate verdigris-colour and iridescent.

Species 47. (Mus. Cuming.)

MODIOLA SUBSULCATA. *Mod. testā oblongā, gibbosā, me-*

*dio contractā, undique densē sulcatā, lateribus rotundatis, antico subangulato; fulvo-castaneā, posticē nilente-corneā, anticē sparsim setigerā.*

THE GROOVED MODIOLA. Shell oblong, gibbous, contracted in the middle, densely grooved throughout, sides rounded, anterior slightly angled; fulvous-chestnut, posteriorly shining horny, anteriorly sparsely bristly.

*Volsella subsulcata*, Dunker, Pro. Zool. Soc. 1856, p. 361.

*Hab.* Bay of Manila; Cuming.

The form of this species is rather gibbous throughout, the entire surface being closely finely grooved.

Species 48. (Mus. Cuming.)

MODIOLA GLABERRIMA. *Mod. testā subtrigono-elonyatā, tenui, levigatā, nilente, latere postico parvo, attenuato, antico gradatim latiore, margine obliquē rotundato; pallidē olivaceo-corneā, ærugineo-purpurascēte radiatim lineatā et concentricē strigatā.*

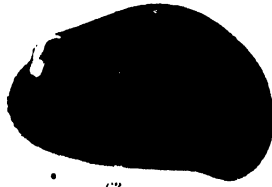
THE GLOSSY MODIOLA. Shell somewhat triangularly ovate, thin, smooth, shining, posterior side small, attenuated, anterior gradually broader, obliquely rounded at the margin; pale olive-horny, radiately lineated and concentrically streaked with light bronze-purple.

*Volsella glaberrima*, Pro. Zool. Soc. 1856, p. 363.

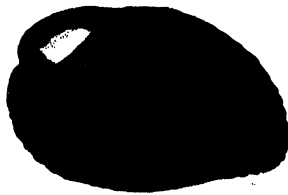
*Hab.* Sydney.

A very delicate horny shell, decussated with characteristic lines and bands of red-bronze purple.

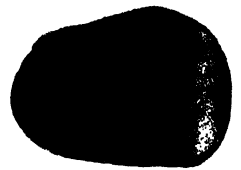




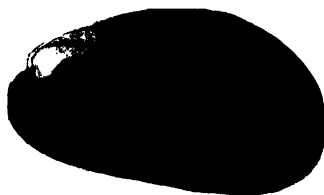
62.



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# MODIOLA.

## PLATE IX.

Species 49. (Fig. 62, Mus. Cuming.)

**MODIOLA NIGRA.** *Mod. testā subquadrato-ovatā, compressiusculā, anticā densè tenuistriatā, medio lævigatā, posticè ad extremitatem liratā; purpureo-nigrā.*

**THE BLACK MODIOLA.** Shell somewhat squarely ovate, rather compressed, anteriorly densely finely striated, smooth in the middle, posteriorly ridged at the extremity; purple-black.

HANLEY, Brit. Marine Conch., Recent Bivalve Shells, p. 242.

*Janistina nigra*, Gray, Conch. Syst. pl. 100. f. 3.

*Hab.* Orsund Bay, Sweden.

A rather compressed species, of deep purple-black colour, belonging, together with the rest of the species in this Plate, to the genus *Modiolarca*, *Crenella*, and *Janistina* of authors.

Species 50. (Fig. 63, a, b, Mus. Cuming.)

**MODIOLA CUMINGIANA.** *Mod. testā oblongo-cuneiformi, curvatā, lenticulatā, anticā valdè gibbosā, tumidā, tenuistriatā, obtusè angulatā, medio lævigatā, posticè ad extremitatem obscurè liratā; fulvescente-cornèā, rufescente-fusco interdum undatā.*

**CUMING'S MODIOLA.** Shell oblong wedge-shaped, curved, rather thin, very gibbous and swollen anteriorly, finely striated and obtusely angled, smooth in the middle, posteriorly obscurely ridged at the extremity; fulvous-horny, sometimes waved with reddish-brown.

DUNKER, MS. Mus. Cuming.

*Hab.* Moreton Bay, Australia.

An extremely delicate species, of a characteristic swollen wedge-shape.

Species 51. (Fig. 64, Mus. Cuming.)

**MODIOLA IMPACTA.** *Mod. testā ovato-cuneiformi, tumidā, posticè et anticè radiatim liratā, liris angustis, subremotis, utrinque excavatis, medio lævigatā; intense olivaceā, cornèā, nitentē.*

**THE DRIVEN MODIOLA.** Shell ovately wedge-shaped, swollen, posteriorly and anteriorly ridged, ridges narrow, rather distant, excavated on both sides, smooth in the middle; dark-olive, horny, shining.

HERMAN, Naturforscher, vol. xvii. pl. 3. f. 5-8.

*Mytilus cor*, Martyn.

*Mytilus discors*, Lamarck (not of Linnaeus).

*Hab.* New Zealand (in sponge).

This, the finest species in the group, is not, as shown by M. Deshayes, the Linnean *Mytilus discors*. It is larger and more gibbous, pearly and purple-rayed within.

Chemnitz gives a characteristic figure of the species a vol. viii. pl. 86. f. 768.

Species 52. (Fig. 65, Mus. Cuming.)

**MODIOLA DISCORS.** *Mod. testā oblongā, subcuneiformi, tumidā, anticè radialim liratā, liris tenuibus, subobscuris, liris posticis fortioribus, remotis, medio lævigatā; olivaceā, cornèā, nitentē.*

**THE DIFFERING MODIOLA.** Shell oblong, somewhat wedge-shaped, swollen, anteriorly radiately ridged, ridges fine, rather obscure, posterior ridges stronger and more distant, middle smooth; olive, horny, shining.

*Mytilus discors*, Linnaeus, Syst. Nat. p. 1159.

*Mytilus discrepans*, Lamarck.

*Hab.* Massachusetts (found adhering to seaweed); Gould.

The anterior striae in this species are fine and close-set.

Species 53. (Fig. 66, Mus. Cuming.)

**MODIOLA LÆVIGATA.** *Mod. testā oblongo-ovatā, anticè latiore, subcompressā, undiquè concentricè striatā, medio subexcavatā, extremitate posticā obscurè sulcatā; olivaceo-castaneā, cornèā, nitentē.*

**THE SMOOTH MODIOLA.** Shell oblong-ovate, broader anteriorly, rather compressed, everywhere concentrically striated, slightly excavated in the middle, posterior extremity obscurely grooved; olive-chestnut, horny, shining.

*Janistina lævigata*, Gray.

*Hab.* Greenland.

The peculiarity of this species consists chiefly in the anterior area not being longitudinally ridged.

Species 54. (Fig. 67, Mus. Cuming.)

**MODIOLA NEXA.** *Mod. testā oblongo-ovatā, convexo-compressā, anticè parum latiore, undiquè densè lineari-sulcatā et liratā, liris medianis subtilissimis, fere obsolete; castaneo-fuscā, umbonibus plus minus erosis, margaritaceis.*

**THE TIED MODIOLA.** Shell oblong-ovate, convexly compressed, anteriorly but little broader, everywhere densely linearly grooved and ridged, middle ridges very fine, almost obsolete; chestnut-brown, umbones more or less eroded, pearly.

GOULD, Invert. Massachusetts.

*Hab.* Massachusetts Bay; United States.

A rather compressed red-brown species, in which the posterior and anterior portions are sculptured alike with densely-set striae.









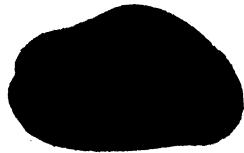
68.



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# MODIOLA.

## PLATE X.

Species 55. (Fig. 68, Mus. Cuming.)

**MODIOLA COSTULATA.** *Mod. testā ovalā, subexpansā, pel-  
lucido-corneā, posticē et anticē minutē subobsoletē cos-  
tulatā, umbonibus parvis contractis.*

**THE FINELY-RIBBED MODIOLA.** Shell ovate, rather ex-  
panded, transparent horny, posteriorly and anteriorly  
minutely rather obsoletely finely ribbed, umboes  
small, contracted.

Risso, Hist. Nat. d'Europe M'rid. vol. iv.<sup>2</sup>p. 324. f. 165.  
(*Oreella costulata*, Forbes and Hanley.

*Hab.* Southern Europe.

A small horny shell, with the umboes unusually con-  
tracted.

Species 56. (Fig. 69, Mus. Cuming.)

**MODIOLA NANA.** *Mod. testā minutā, obliquē ovalā, tenni,  
umbonibus subrostratis; pellucido-corneā, lineis rufes-  
centibus variegatā.*

**THE DWARF MODIOLA.** Shell minute, obliquely ovate,  
thin, umboes somewhat beaked; transparent horny,  
variegated with reddish lines.

*Laetitia nana*, Dunker, Pro. Zool. Soc. 1856, p. 365.

*Hab.* Port Lincoln, Australia.

A very minute semitransparent bronze-horny shell, va-  
riegated with fine zigzag reddish lines.

Species 57. (Fig. 70, Mus. Cuming.)

**MODIOLA SUBTORTA.** *Mod. testā parvulā, subtortā, ob-  
longo-trapezinā, versus umbones attenuatā, concentricē  
rugosā, posticē albidā, anticē nigricante-fuscā.*

**THE TWISTED MODIOLA.** Shell rather small, slightly  
twisted, oblong-trapezoid, attenuated towards the  
umboes, concentrically wrinkled, posteriorly whitish,  
anteriorly blackish-brown.

*Modiolarca subtorta*, Dunker, Pro. Zool. Soc. 1856, p. 365.

*Hab.* New Holland.

A narrow trapezoid shell, peculiarly slightly twisted.

Species 58. (Fig. 71, Mus. Cuming.)

**MODIOLA LIGNEA.** *Mod. testā oblongā, ventricosā, so-  
lidiusculā, nitente-castaneā, concentricē rude striatā,  
medio angustē contractā, umbonibus globoso-tumidis.*

**THE WOOD MODIOLA.** Shell oblong, ventricose, rather  
solid, shining chestnut, concentrically rudely striated,  
narrowly contracted in the middle, umboes globosely  
swollen.

*Hab.* — ?

A rather solid ventricose shell, striated only concentri-  
cally with a smooth shining-chestnut epidermis.

Species 59. (Fig. 72, Mus. Cuming.)

**MODIOLA STRIATULA.** *Mod. testā elongato-trapezinā, sub-  
angustā, medio gibbosā, tenuiculā, undique radiatim  
densē tenuiliratā; olivaceā, nigro radiatim fasciatā.*

**THE STRIATED MODIOLA.** Shell elongately trapezoid,  
rather narrow, gibbous in the middle, rather thin,  
everywhere radiately densely finely ridged; olive,  
radiately banded with black.

HANLEY, Recent Bivalve Shells, p. 241.

*Hab.* Philippine Islands.

Of a peculiarly elongated trapezoid form, densely finely  
ridged throughout, the ridges radiating off wider and  
rather more distinct on the anterior margin.

Species 60. (Fig. 73, Mus. Cuming.)

**MODIOLA EMARGINATUS.** *Mod. testā oblongo-trapezinā,  
anticē obliquē subflabellatā, posticē contractā, subcana-  
liculatā, radiatim tenuiliratā; nigricante-olivaceā.*

**THE EMARGINATED MODIOLA.** Shell oblong-trapezoid,  
anteriorly obliquely somewhat fan-shaped, posteriorly  
contracted, rather channelled, radiately finely ridged;  
blackish-olive.

BENSON, MS. in Mus. Cuming.

*Hab.* — ?

Of more solid structure and less elongated form than  
the preceding species, not so strongly and regularly ridged.

Species 61. (Fig. 74, Mus. Cuming.)

**MODIOLA SULCATA.** *Mod. testā elongatā, anticē flabellatā,  
margine subangulatā, compressā, radiatim densē flexu-  
oso-liratā, medio gibbosā, umbonibus prominentibus;  
virescente-olivaceā, nigricante obscurē fasciatā.*

**THE GROOVED MODIOLA.** Shell elongated, anteriorly  
fan-shaped, slightly angled and compressed at the

# MODIOLA.—PLATE X.

margin, radiately densely flexuously ridged, gibbous in the middle, umboes prominent; greenish-olive, obscurely dark-banded.

LAMARCK, Anim. sans vert. vol. ix.

An elongately fan-shaped shell, agreeably coloured, with a livid-olive hue tinged with shining chestnut, the whole surface being flexuously ridged.

Species 62. (Fig. 75, Mus. Cuming.)

**MODIOLA FORTUNEI.** *Mod. testâ parvulâ, ovato-oblongâ, subtrigonâ, utrinque obtusè carinatâ, concentricè rugoso-striatâ; superne violaceâ, inferne albidâ, epidermide virente indutâ.*

**FORTUNE'S MODIOLA.** Shell rather small, ovately oblong, somewhat triangular, obtusely keeled on both sides, concentrically roughly striated; violet at the upper part, whitish below, covered with a greenish epidermis.

*Folsella Fortunei*, Dunker, Pro. Zool. Soc. 1856, p. 361.

*Hab.* China Sea; Fortune.

Of neat symmetrical form, richly coloured on the upper part, pale at the lower.

Species 63. (Fig. 76, Mus. Cuming.)

**MODIOLA PHASEOLINA.** *Mod. testâ pyriformi-ovatâ, lu-*

*midiusculâ, cornuâ, co-*, *epidermide sub-*  
*spinosâ indutâ.*

**THE PEASE MODIOLA.** Shell pyriformly ovate, rather swollen, horny, concentrically striated, covered with a somewhat spinous epidermis.

PHILIPPI, Enum. Mol. Sicil. vol. ii. p. 51. f. 14.

*Hab.* West coast of Scotland; M'Andrew.

A spinously beaded horny shell, originally observed by Philippi in Sicily in a fossil state, and lately found living on the north-east and west coasts of Scotland.

Species 64. (Fig. 77, Mus. Cuming.)

**MODIOLA FLAVIDA.** *Mod. testâ oblongâ, tenui, inflatâ, lineis concentricis tenuibus elevatis sculptâ; flavidâ, lineâ ab umbonibus ad basin obliquè decurrente colore pallidiore signatâ; umbonibus tumidis, marginis centrali posticè sinuatâ.*

**THE YELLOWISH MODIOLA.** Shell oblong, thin, inflated, sculptured with fine raised concentric lines; yellowish, with a line running down obliquely from the umboes to the base marked with a paler colour. umboes swollen, ventral margin posteriorly sinuated.

*Folsella flavida*, Dunker, Pro. Zool. Soc. 1856, p. 364.

*Hab.* Bay of Manila; Cuming.

A light inflated shell of yellowish-chestnut colour, delicately sculptured with raised concentric lines.





7A



7B



7C



7H



7I



# MODIOLA

## PLATE XI.

Species 65. (Fig. 78 and 80, Mus. Cuming.)

**MODIOLA CICEROUULA.** *Mod. testā oblique orbiculari, convexā, umbonibus parvis, decussatim striatā, striis radiantibus subdivaricatis; albidā, luteo-fuscescente tinctā.*

**THE CHICK-PEA MODIOLA.** Shell obliquely orbicular, convex, umboes small, decussately striated, radiating striae rather divaricate; whitish, tinged with yellowish-brown.

MÖLLER, Fauna Grœnlandica.

*Mytilus decussatus*, Montagu.

*Crenella elliptica*, Brown.

*Hab.* Greenland; Möller. Orkney; M'Andrew.

A small pea-like shell, with very much the aspect of a little *Cardium*.

Species 66. (Fig. 79, Mus. Cuming.)

**MODIOLA RHOMBEA.** *Mod. testā oblique quadratā, anticē latiore, subproductā, medio valde gibbosā, obtusē angulatā, undique radiatim tenuistriatā; rosaceo-albā, subpellucidā.*

**THE RHOMBOID MODIOLA.** Shell obliquely quadrate, anteriorly broader and somewhat produced, very gibbous in the middle, obtusely angled, everywhere rayed with fine striae; pinkish-white, slightly transparent.

BERKELEY, Zool. Journ. vol. iii. p. 229. Supp. pl. 18. f. 1.

*Hab.* Tunis; M'Andrew.

A rather solid, gibbous, rhomboid shell, of a pinkish hue.

Species 67. (Fig. 81, Mus. Cuming.)

**MODIOLA MARMORATA.** *Mod. testā oblique rhomboideā, valde gibbosā, obtusē angulatā, posticē et anticē radiatim liratā et sulcatā, medio lævigatā; virescente-cinerea, rosacea tinctā.*

**THE MARBLED MODIOLA.** Shell obliquely rhomboid, very gibbous, obtusely angled, rayed posteriorly and anteriorly with grooves and ridges, smooth in the middle; greenish-ash, tinged with rose.

FORBES, Malacol. Monens. p. 40.

*Modiola tamida*, Hanley.

*Modiola Poliana*, Philippi.

*Crenella marmorata*, Forbes and Hanley.

*Hab.* Britain.

An interesting small species, of the characteristic *Lammina* group.

Species 69. (Fig. 82, Mus. Cuming.)

**MODIOLA GLANDULA.** *Mod. testā suboblique orbiculari, convexā, umbonibus parvis, decussatim striatā, striis longitudinalibus fortioribus, subdivaricatis; sordide albā, epidermide luteā indutā.*

**THE ACORN MODIOLA.** Shell somewhat obliquely orbicular, convex, umboes small, decussately striated, longitudinal striae the stronger, rather divaricate; dull white, covered with a yellow epidermis.

TOTTEN, Silliman's American Journal of Science, vol. xxvi. p. 367. f. 3.

A *Cardium*-shaped species, of the same typical form as *M. cicercula*.

Fig. 83. (Mus. Cuming.)

\*A young specimen of *M. strigata*, Hanley, described at Pl. VII. Fig. 33.

Species 69. (Fig. 84, Mus. Cuming.)

**MODIOLA PECTINULA.** *Mod. testā obovatā, ventricosā, anticē latiore, radiatim costatā, umbonibus subprominulis; luteo-fuscescente.*

**THE LITTLE PECTEN MODIOLA.** Shell obovate, ventricose, broader anteriorly, radially ribbed, umboes rather prominent; yellowish-brown.

GOULD, Invertebrata of Massachusetts, p. 127. f. 85.

*Hab.* St. George's Bank, Bay of Massachusetts, United States.

Of a rather solid obovate *Cardium*-like form.

Species 70. (Fig. 85, Mus. Cuming.)

**MODIOLA BULLA.** *Mod. testā oblique globosā, vitreo-albā, lævigatā, sub lente minutissime radiatim striatā, gibbosissimā, umbonibus parvis, incurvis.*

**THE BUBBLE MODIOLA.** Shell obliquely globose, glassy-white, smooth, beneath the lens very minutely ra-



# MODIOLA.—PLATE XI.

diately striated, very gibbous, umbos small, incurved.

*Orerella bulla*, Dunker, Pro. Zool. Soc. 1856, p. 366.

*Hab.* Island of Luzon, Philippines; Cuming.

A delicate bubble-like glassy shell, of a very gibbous *Isocardia*-like form.

Species 71. (Fig. 86, Mus. Cuming.)

MODIOLA FABA. *Mod. testā obovatā, obliquè compressā, radiatim tenuicostatā; livido-purpurascēte, epidermidē corneā nilente-castaneā indulatā.*

THE BEAN MODIOLA. Shell obovate, obliquely com-

pressed, radiately finely ribbed; livid-purple, covered with a shining chestnut horny epidermis.

*Mytilus faba*, Fabricius, Gmelin, Syst. Nat. p. 3359.

*Modiola arctica*, Leach.

*Hab.* Greenland.

Partaking very much of the character of Dr. Gould's *M. pectinula*, but uniformly smaller and more compressed, with a dark, shining, horny epidermis.

Fig. 87. (Mus. Cuming.)

The shell here figured proves to be a young transparent example of *M. marmorata*, Forbes, represented above as Fig. 81.

# MODIOLA.

albicosta, <i>Lamarck</i> . . . . .	II.	7	nitida, <i>Hanley</i> . . . . .	II.	6
arata, <i>Dunker</i> . . . . .	IV.	12	opifex, <i>Say</i> . . . . .	VIII.	39
arcuatula, <i>Hanley</i> . . . . .	VI.	27	<i>Papuana</i> , <i>Lamarck</i> . . . . .	I.	2
arborescens ( <i>Mytilus</i> ), <i>Chemnitz</i>	VI.	30	pectinula, <i>Gould</i> . . . . .	XI.	69
Australis, <i>Gray</i> . . . . .	V.	21	perfragilis ( <i>Folsella</i> ), <i>Dunker</i> .	VIII.	42
barbata, <i>Lamarck</i> . . . . .	III.	9	Petagnæ, <i>Scacchi</i> . . . . .	VIII.	46
Brasilicusis, <i>Chemnitz</i> . . . . .	IV.	17	phascolina, <i>Philippi</i> . . . . .	X.	63
bullæ ( <i>Crenella</i> ), <i>Dunker</i> . . . .	XI.	70	Philippinarum, <i>Hanly</i> . . . . .	I.	1
capax, <i>Conrad</i> . . . . .	III.	11	picta, <i>Lamarck</i> . . . . .	VI.	30
cicereula, <i>Müller</i> . . . . .	XI.	65	picta, <i>Dunker</i> . . . . .	VIII.	40
costulata, <i>Risso</i> . . . . .	X.	55	plicata ( <i>Mytilus</i> ), <i>Gmelin</i> . . . .	VI.	25
Cuningiana, <i>Dunker</i> . . . . .	IX.	50	plicatula, <i>Lamarck</i> . . . . .	III.	8
discois ( <i>Mytilus</i> ), <i>Linn.</i> . . . .	IX.	52	<i>Poliana</i> , <i>Philippi</i> . . . . .	XI.	67
elegans, <i>Gray</i> . . . . .	V.	19	recta, <i>Conrad</i> . . . . .	VII.	38
elongata, <i>Seuinson</i> . . . . .	II.	4	rhombea, <i>Berkeley</i> . . . . .	XI.	66
emarginatus, <i>Benson</i> . . . . .	X.	60	rhomboidea, <i>Hanley</i> . . . . .	VI.	28
fabæ ( <i>Mytilus</i> ), <i>Fabricius</i> . . . .	XI.	71	semifusca, <i>Sowerby</i> . . . . .	IV.	17
flavida ( <i>Folsella</i> ), <i>Dunker</i> . . . .	X.	64	*Senhansii, <i>Reeve</i> . . . . .	V.	22
Fortunei ( <i>Folsella</i> ), <i>Dunker</i> . . .	X.	62	setigera ( <i>Folsella</i> ), <i>Dunker</i> . . .	V.	20
glaberrima ( <i>Folsella</i> ), <i>Dunker</i> . .	VIII.	48	speciosa ( <i>Folsella</i> ), <i>Dunker</i> . . .	VII.	35
glandula, <i>Totten</i> . . . . .	XI.	69	splendens ( <i>Mytilus</i> ), <i>Dunker</i> . . .	VII.	37
gubernaculum ( <i>Folsella</i> ), <i>Dunker</i>	VII.	32	striatula, <i>Hanley</i> . . . . .	X.	59
<i>Guyanensis</i> , <i>Lamarck</i> . . . . .	IV.	17	strigata ( <i>Mytilus</i> ), <i>Hanley</i> . . . .	VII.	33
impacta, <i>Herman</i> . . . . .	IX.	51	subpurpurea ( <i>Folsella</i> ), <i>Dunker</i> .	VIII.	44
inconstans, <i>Dunker</i> . . . . .	V.	19	subramosa, <i>Hanley</i> . . . . .	VIII.	43
Japonica ( <i>Folsella</i> ), <i>Dunker</i> . . .	VI.	26	subsulcata ( <i>Folsella</i> ), <i>Dunker</i> . .	VIII.	47
lavigata ( <i>Lanistina</i> ), <i>Gray</i> . . . .	IX.	53	subtorta ( <i>Modiolarca</i> ), <i>Dunker</i> . .	X.	57
lignea, <i>Reeve</i> . . . . .	X.	58	sulcata, <i>Lamarck</i> . . . . .	X.	61
Magellanica ( <i>Folsella</i> ), <i>Dunker</i> .	VIII.	41	Traillii, <i>Reeve</i> . . . . .	IV.	13
marmorata, <i>Forbes</i> . . . . .	XI.	67	tristis ( <i>Folsella</i> ), <i>Dunker</i> . . . .	VII.	34
Metcalfei, <i>Hanley</i> . . . . .	IV.	16	tulipa, <i>Lamarck</i> . . . . .	IV.	15
modiolus ( <i>Mytilus</i> ), <i>Linn.</i> . . . .	I.	2	tumida, <i>Hanley</i> . . . . .	XI.	67
modiolus, <i>Turton</i> . . . . .	I.	2	undulata ( <i>Folsella</i> ), <i>Dunker</i> . . .	V.	18
nana ( <i>Lanistina</i> ), <i>Dunker</i> . . . .	X.	56	vagina, <i>Lamarck</i> . . . . .	I.	3
nexa, <i>Gould</i> . . . . .	IX.	54	varicosa, <i>Gould</i> . . . . .	VI.	27
nigra ( <i>Lanistina</i> ), <i>Gray</i> . . . . .	IX.	49	vexillum, <i>Reeve</i> . . . . .	VIII.	40
nitens, <i>Carpenter</i> . . . . .	V.	23	vulgaris, <i>Fleming</i> . . . . .	I.	2



MONOGRAPH  
OF THE GENUS  
L I T H O D O M U S.

“ Farewell, farewell ! but this I tell  
To thee, thou Wedding-Guest :  
He prayeth well, who loveth well  
Both man, and bird, and beast.”  
*The Ancient Mariner.*







# LITHODOMUS.

PLATE 1.

Genus LITHODOMUS, Cuvier.

*Testa transversa, cylindraceo-oblonga, aequalis, epidermid-rufo-castaneâ induta, calce interdum incrustata; extremitatibus rotundatis; latere postico brevissimo; umbonibus parvis, incurvis. Cardo linearis, ligamento marginali. Impressio muscularis composita, indistincta.*

Shell transverse, cylindrically oblong, equivalve, covered with a reddish-chestnut epidermis, sometimes incrustated with chalk; extremities rounded; posterior side very short; umboes small, incurved. Hinge linear, with the ligament marginal. Muscular impression compound, indistinct.

This very interesting genus, founded by Cuvier, is not alone distinguished from *Modiola* by the boring habits of its animal. The shell is always of a peculiarly oblong-cylindrical or wedge-shaped form, and of a peculiar substance. It is found imbedded in stone, chalk, coral, and in the valves of *Spondylus* shells, though often extremely delicate in structure. There is scarcely any species which is not beautifully striated, and there are several curiously sculptured with feathery wrinkles or furrows. Another peculiarity consists in the shell being frequently thickly incrustated with a deposit of chalky matter, which is sometimes sculptured, and in some few instances produced beyond the extremity. Among the small species, a few are bearded with bristles.

The geographical range of this genus is partial, but widely distributed. There are more species perhaps in the West Indies than in any other locality, but the genus is known to inhabit the Philippine Islands, New Zealand, Chili, the Galapagos Islands, and Mazatlan.

Species 1. (Mus. Cuming.)

LITHODOMUS CORRUGATUS. *Lithod. testâ subcylindraceâ, flavidâ, per totam superficiem striis arcuatis posticè divaricatis corrugatâ, extremitate anticâ angustâ, posticâ dilatatâ, margine dorsali medio elevato, subangulato.*

THE WRINKLED LITHODOMUS. Shell somewhat cylindrical, yellowish, wrinkled over the entire surface with posteriorly divaricated arched striæ, anterior extremity narrow, posterior dilated, dorsal margin raised in the middle, slightly angled.

*Modiola corrugata*, Philippi, Abbild. und Besch. Conch. vol. ii. p. 147. pl. 1. f. 1.

Hab. Island of St. Vincent, West Indies.

A yellowish shell, rather depressed, with the surface diagonally crossed throughout with waved wrinkles.

Species 2. (Mus. Cuming.)

LITHODOMUS MALAYANUS. *Lithod. testâ subtereti, castaneâ, striis perpendicularibus exarâtâ, areâ dorsali lenigatâ, margine subtrigono-producto, umbonibus involutis, parte anticâ manifestè angustiore.*

THE MALAY LITHODOMUS. Shell somewhat slender, chestnut, furrowed with perpendicular striæ, dorsal area smooth, margin rather angularly produced, umboes involute, anterior portion of the shell manifestly narrowed.

*Modiola Malayana*, Philippi, Abbild. und Besch. Conch. vol. iii. p. 21. pl. 2. f. 6.

Hab. Malay.

A short dark-chestnut shell, grooved perpendicularly over one-half of its surface, the dorsal margin being rather angularly produced in the middle.

Species 3. (Mus. Cuming.)

LITHODOMUS TRUNCATUS. *Lithod. testâ oblongâ, ab umbonibus obtusè angulatâ, anticè attenuatâ, posticè tumidâ, angulato-truncatâ, medio subcontractâ; nigricante-castaneâ, concentricè rudè striatâ.*

THE TRUNCATED LITHODOMUS. Shell oblong, obtusely angled from the umboes, attenuated anteriorly, posteriorly swollen and angularly truncated, a little contracted in the middle; dark chestnut, concentrically rudely striated.

GRAY, Appendix to Dieffenbach's 'New Zealand.'

Peculiarly distinguished from all other species of the genus by its truncated and angularly contracted form.

Species 4. (Mus. Cuming.)

LITHODOMUS GRACILIS. *Lithod. testâ elongato-cylindraceâ, rufo-castaneâ, in parte anticâ striis perpendicularibus exarâtâ, extremitate posticâ vixim attenuatâ, anticam æquantè, margine dorsali convexusculo, haud angulato.*

THE SLENDER LITHODOMUS. Shell elongately cylindrical, reddish-chestnut, furrowed on the anterior portion with perpendicular striæ, posterior extremity



# LITHODOMUS.—PLATE I.

Equally attenuated, equal in the anterior, dorsal margin rather convex, not angled.

*Modiola gracilis*, Philippi, Zeitschrift für Malac. 1847;

Abbildungen, pl. 2. f. 1.

*Hab.* China.

This fine species, the largest of the genus, is of a rich dark chestnut colour, with the furrowed sculpture of the anterior surface somewhat delicately indicated.

Species 5. (Fig. a, b, Mus. Cuming.)

**LITHODOMUS CINNAMOMINUS.** *Lithod. testā cylindraceo-cuneiformi, tumidā, subarcuatā, undique minutissimè decussatim striatā, castaneā aut flavescēte-castaneā, nitente, quasi sericeā, extremitate anticā abruptè truncatā, umbonibus nitidè involutis, posticā subcompressā.*

**THE CINNAMON LITHODOMUS.** Shell cylindrically wedge-shaped, swollen, rather arched, everywhere very minutely decussately striated, chestnut or yellowish-chestnut, shining as though silky, anterior extremity abruptly truncated, with the umboes neatly involuted, posterior extremity rather compressed.

*Mytilus cinnamominus*, Chemnitz, Conch. Cab. vol. viii. p. 252. pl. 82. f. 731.

*Mytilus cinnamomeus*, Bruguière.

*Modiola cinnamomea*, Lamarek.

*Hab.* Philippine Islands, and Island of St. Thomas, West Indies.

This species is peculiarly distinguished by its swollen, wedge-shaped, *Modiola*-like form, and shining, silky appearance.

Species 6. (Mus. Cuming.)

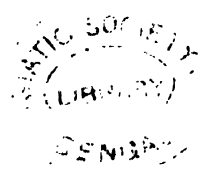
**LITHODOMUS OBESUS.** *Lithod. testā oblongā, medio obesa, utrinque fere æqualiter rotundatā, flavescēte, lavi aut concentricè striatā, margine ventrali arcuato, dorsali declivi-angulato, angulo fere obsolete, extremitate anticā subattenuatā, umbonibus indistinctis.*

**THE STOUT LITHODOMUS.** Shell oblong, stout in the middle, almost equally rounded at both ends, yellowish, smooth or concentrically striated, ventral margin arched, dorsal slopingly angled, with the angle nearly obsolete, anterior extremity rather attenuated, umboes distinct.

*Modiola obesa*, Philippi, Zeitschrift für Malac. 1847; Abbildungen, pl. 2. f. 2.

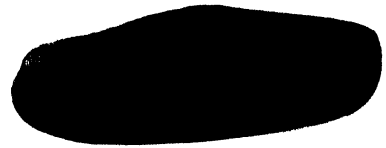
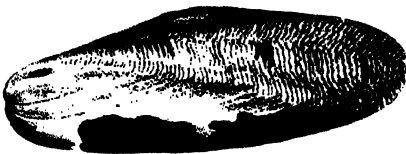
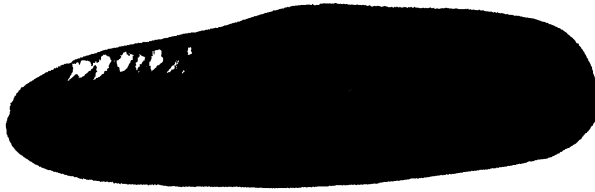
*Hab.* China.

Well distinguished by its stout, angular form, and absence of furrowed sculpture.





8b.



10b.



11.

Vincent Brown

# LITHODOMUS.

## PLATE II.

### Species 7. (Mus. Cuming.)

LITHODOMUS ANTILLARUM. *Lithod. testâ cylindrâ, gracili, intensè castaneâ, in parte posticâ striis perpendicularibus fere omnino exarata, extremitate anteriâ posticâ æquante, margine centrali fere rectilineo in extremitate posticâ ascendente, dorsali subangulato, umbonibus involutis, ultra extremitatem posticam prominulis.*

THE WEST INDIAN LITHODOMUS. Shell cylindrical, slender, dark chestnut, furrowed almost entirely on the posterior portion with perpendicular striae, anterior extremity equalling the posterior, dorsal slightly angled, umbones involuted, rather protruding beyond the posterior extremity.

*Modiola (Lithophagus) Antillarum*, Philippi, Zeitschrift für Malac. 1847.

*Hab.* West Indies.

Of a very dark chestnut colour, straight in form, gently angularly sloping about three-fifths of the way down.

### Species 8. (Fig. a, b, Mus. Cuming.)

LITHODOMUS CUMINGIANUS. *Lithod. testâ elongatâ, posticè subglobosâ, anticè gradatim attenuatâ, tenuiculi, concentricè striatâ, striis hic illic subcorrugato-plicatis; flavescente-olivaceâ.*

THE CUMINGIAN LITHODOMUS. Shell elongated, posteriorly subglobose, anteriorly gradually attenuated, rather thin, concentrically striated, striae here and there somewhat wrinkle-plicated; yellowish-olive.

DUNKER, MS. in Mus. Cuming.

*Hab.* North Australia, Mazatlan.

A shell of light substance and pale yellowish-olive colour, globosely formed at the posterior end, and gradually attenuated towards the anterior.

### Species 9. (Mus. Cuming.)

LITHODOMUS LITHOPHAGUS. *Lithod. testâ cylindrâ, castaneâ, in parte posticâ obsolete decussatim exarata, anticè concentricè rudè plicatâ, haud attenuatâ, rectilineâ.*

THE STONE-BORING LITHODOMUS. Shell cylindrical,

chestnut, obsolete decussately furrowed on the posterior part, anteriorly concentrically rudely plicated, not attenuated, rectilinear.

*Mytilus lithophagus*, Linnaeus, Syst. Nat. p. 1156.

*Modiola lithophaga*, Deshayes.

*Hab.* Malta

This is the well-known typical species of the genus, described by Linnaeus as a *Mytilus*, and by earlier naturalists. D'Argenville, Klein, Petiver, Rumphius, Lister, and Rondeletius, as a *Pholas*.

### Species 10. (Fig. a, b, Mus. Cuming.)

LITHODOMUS NASUTUS. *Lithod. testâ subcylindrâ, tenui, lævigatâ, anticè concentricè plicato-striatâ, margine dorsali medio elevato, utrinque subæqualiter declivi, flavescente-castaneâ.*

THE NOSED LITHODOMUS. Shell nearly cylindrical, thin, smooth, anteriorly concentrically plicately striated, dorsal margin raised in the middle, nearly equally sloping on each side; yellowish-chestnut.

*Modiola nasuta*, Philippi, Abbild. und Besch. Conch. vol. ii. p. 149. pl. 1. f. 2.

*Hab.* Island of St. Thomas, West Indies.

A comparatively smooth shell, frequently incrustated, as in Fig. 10 b, with calcareous matter which on the anterior side becomes decussately furrowed.

### Species 11. (Mus. Cuming.)

LITHODOMUS STRAMINEUS. *Lithod. testâ cylindrâ, posticè gibbâ, anticè latiore, rectilineâ, parte posticâ striis perpendicularibus, hic illic divaricatis, eximè exarata; stramineo-castaneâ.*

THE STRAW-COLOURED LITHODOMUS. Shell cylindrical, posteriorly gibbous, anteriorly broader, rectilinear, posterior part delicately furrowed with perpendicular striae which are here and there divaricate; straw-coloured chestnut.

DUNKER, MS. in Mus. Cuming.

*Hab.* West Indies.

There is little to distinguish this species from *L. lithophagus* except its paler tone of colour, which is a character insufficient from its variability.







45b.



# LITHODOMUS.

## PLATE III.

### Species 12. (Mus. Cuming.)

LITHODOMUS GRUNERI. *Lithod. testā arcuato-elongatā, circa umbones peculiariter angulatō-gibbosā, anticē attenuatā, intensē castaneā, undique obliquē flexuoso-exarātā.*

GRUNER'S LITHODOMUS. Shell arcuately elongated, peculiarly angularly gibbous about the umbones, attenuated anteriorly; dark-chestnut, obliquely flexuously furrowed throughout.

PHILIPPI, MS. in Mus. Cuming.

Hab. New Zealand.

This species, it will be seen, is distinguished by a very remarkable shape. In other respects the characters are much of the ordinary type.

### Species 13. (Mus. Cuming.)

LITHODOMUS TERES. *Lithod. testā subcylindraceā, partē posticā densē perpendiculariter exarātā, anticā lævigatā; intensē castaneā.*

THE SLENDER LITHODOMUS. Shell somewhat cylindrical, posterior part closely perpendicularly furrowed, anterior smooth; dark-chestnut.

PHILIPPI, Abbild. und Besch. Conch. vol. ii. p. 148. pl. 1. f. 3.

Hab. Mazatlan.

Of simple form and sculpture, uniformly of small size.

### Species 14. (Mus. Cuming.)

LITHODOMUS COARCTATA. *Lithod. testā oblongo-cuneiformi, undique perpendiculariter exarātā, posticē globoso-cordiformi, gibbosā, deinde anticē attenuato-coarctatā, versus extremitatem epidermide fibrosā barbātā.*

THE CONTRACTED LITHODOMUS. Shell oblong wedge-shaped, perpendicularly furrowed throughout, posteriorly globosely heart-shaped, gibbous, then anteriorly attenuately contracted, bearded towards the extremity with a fibrous epidermis.

*Volvella coarctata*, Dunker.

Hab. Gallapagos Islands; Cuming.

Eminently distinguished by its wedge-shaped *Arca*-like form, the posterior portion being prettily involuted like an

*Isocardia*; the anterior attenuated and bearded with a fibrous epidermis.

### Species 15. (Fig. a, b, Mus. Cuming.)

LITHODOMUS ATTENUATUS. *Lithod. testā cylindraceā, tenui, posticē globosā, tumidiusculā, deinde coarctatā et anticē gradatim attenuatā, undique lævigatā vel obsolete malleatā; flavescente-olivaceā.*

THE ATTENUATED LITHODOMUS. Shell cylindrical, thin, posteriorly globose, then contracted and anteriorly gradually attenuated, smooth or obsoletely malleated throughout; yellowish-olive.

*Modiola attenuata*, Deshayes, Anim. sans vert. vol. vii. p. 28.

Hab. Chili and Peru.

A very characteristic species, of a yellowish-olive colour, thin in substance, except when incrustated with calcareous matter, as in Fig. 15 a, with no indication on its surface of the perpendicular furrows frequent in this genus.

### Species 16. (Mus. Cuming.)

LITHODOMUS CAUDIGERUS. *Lithod. testā cylindraceā, tenui, lævigatā, extremitate anticā appendicibus calcareis angustatis subcundatā; rufescente-castaneā.*

THE TAIL-BEARING LITHODOMUS. Shell cylindrical, thin, smooth, anterior extremity tailed with narrow calcareous appendages; reddish-chestnut.

LAMARCK, Anim. sans vert. vol. vii. p. 27.

Hab. West Indies.

We need scarcely remark that the calcareous incrustation protruding beyond the anterior extremity of this shell is no specific characteristic.

### Species 17. (Mus. Cuming.)

LITHODOMUS CASTANEUS. *Lithod. testā cylindraceā, tenui, undique gibbosiusculā et lævigatā; castaneā.*

THE CHESTNUT LITHODOMUS. Shell cylindrical, thin, rather gibbous throughout and smooth; chestnut.

DUNKER, MS. in Mus. Cuming.

Hab. — ?

Of extremely simple character, without any appearance of furrowed sculpture.









19.



18.



20.



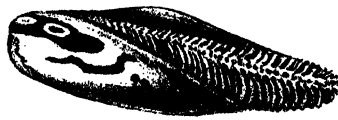
21.



22a.



22b.



23.



24.



25.



26.

# LITHODOMUS.

## PLATE IV.

### Species 18. (Mus. Cuming.)

LITHODOMUS RUGIFERUS. *Lithod. testā cylindrācē, tenui, convexā, extremitatibus subæqualiter rotundatis; flavescēte-castaneā, parte posticā crustā calcareā dense rugiferā.*

THE WRINKLED LITHODOMUS. Shell cylindrical, thin, convex, extremities nearly equally rounded; yellowish-chestnut, posterior part with the calcareous crust densely wrinkled.

DUNKER, MS. in Mus. Cuming.

Hab. — ?

A shell of rather slight substance, incrustated with a wrinkle-roughened calcareous coating.

### Species 19. (Mus. Cuming.)

LITHODOMUS HANLEYANUS. *Lithod. testā parviusculā, rotundato-cylindrācē, tenuissimā, anticē subexcavatā et rugulosā.*

HANLEY'S LITHODOMUS. Shell rather small, rotundately cylindrical, very thin, anteriorly slightly excavated and rugulose.

DUNKER, MS. in Mus. Cuming.

Hab. Suez.

In this very slight species the wrinkled sculpture of the calcareous coating is at the anterior end.

### Species 20. (Mus. Cuming.)

LITHODOMUS MALACCANUS. *Lithod. testā parviusculā, tenui, angustē cylindrācē, posticē rotundatā, anticē attenuatā et rugoso-exarātā.*

THE MALACCA LITHODOMUS. Shell rather small, thin, narrowly cylindrical, posteriorly rounded, anteriorly attenuated and wrinkle-furrowed.

Hab. Malacca.

Of rather narrower cylindrical form than the preceding species, conspicuously attenuated and wrinkle-furrowed at the anterior end.

### Species 21. (Mus. Cuming.)

LITHODOMUS APPENDICULATUS. *Lithod. testā subcylindrācē, lævigatā, posticē rotundatā, anticē attenuatā,*

*areā superiore utrinque excavatā, appendicibus medianis prominulis.*

THE APPENDAGED LITHODOMUS. Shell nearly cylindrical, smooth, posteriorly rounded, anteriorly attenuated, upper area excavated on both sides, the middle appendages being rather prominent.

*Modiola appendiculata*, Philippi, Abbild. und Besch. Conch. vol. ii. p. 150. pl. 1. f. 4.

Hab. Cuba.

Characterized by an excavation running on each side, from the ligamentary area to the anterior extremity, which produces a raised wing-like prominence in the centre.

### Species 22. (Fig. a, b, Mus. Cuming.)

LITHODOMUS BI-EXCAVATUS. *Lithod. testā cylindrācē, naviformi, posticē convexā, lævigatā, anticē biradiatim angulato-excavatā, rugosā.*

THE DOUBLY-EXCAVATED LITHODOMUS. Shell cylindrical, boat-shaped, posteriorly convex, smooth, anteriorly biradiately angularly excavated, rough.

Hab. Island of St. Thomas, West Indies.

Very closely allied to the preceding species, but of rather different form, more decidedly excavated down each anterior slope, though the upper middle portion of the valves is less prominent.

### Species 23. (Mus. Cuming.)

LITHODOMUS PLUMULA. *Lithod. testā elongato-cylindrācē, posticē rotundatā, lævigatā, anticē attenuatā, peculiariter rugoso-plumulatā.*

THE FEATHER LITHODOMUS. Shell elongately cylindrical, posteriorly rounded, smooth, anteriorly attenuated, peculiarly roughly feathered.

HANLEY, Pro. Zool. Soc. 1844, p. 17.

Hab. Panama (found imbedded in *Spondyli*); Cuming.

This species is especially curious in showing the feathery disposition of the incrustation on the anterior slope.

### Species 24. (Mus. Cuming.)

LITHODOMUS PESSULATUS. *Lithod. testā cylindrācē, posticē rotundatā, anticē declivi-attenuatā, parte posticā*

*perpendiculariter corrugata, antice subexcavata et rugoso-plumulata.*

THE BARRED LITHODOMUS. Shell cylindrical, posteriorly rounded, anteriorly slopingly attenuated, posterior part perpendicularly wrinkled, anterior slightly excavated and roughly feathered.

Hab. — ?

This little species is sharply attenuated, whilst the incrustation is roughly wrinkled on the posterior as well as anterior side.

Species 25. (Mus. Cuming.)

LITHODOMUS CANALIFERUS. *Lithod. testâ cylindraces, posticè rotundatâ, anticè bi-radiatim excavatâ et angustè multi-canaliculatâ.*

THE CHANNELLED LITHODOMUS. Shell cylindrical, posteriorly rounded, anteriorly biradiately excavated and narrowly many-channelled.

HANLEY, Pro. Zool. Soc. 1844, p. 16.

Hab. Island of Zebu, Philippines; Cuming.

The calcareous crust in this species takes a very characteristic form, being rayed on the anterior slope in deep narrow channels.

Fig. 26. (Mus. Cuming.)

LITHODOMUS SUBULA. *Lithod. testâ elongatâ, posticè globosâ, anticè subacutè attenuatâ, parte posticâ levigatâ, anticâ angustè canaliculatâ et rugoso-plumulatâ.*

THE AWL LITHODOMUS. Shell elongated, posteriorly globose, anteriorly rather sharply attenuated, posterior part smooth, anterior narrowly channelled and roughly feathered.

Hab. — ?

Allied to *L. plumula*, but more sharply attenuated, and more narrowly channelled along the edge of the anterior slope.





# LITHODOMUS:

## PLATE V.

### Species 27. (Mus. Cuming.)

**LITHODOMUS BARBATUS.** *Lith. testā obliquē oblongā, medio obtusē angulatā, tenui, corneā, minutē granulato-striatā, epidermide versus extremitatem barbata indutā.*

THE BEARDED LITHODOMUS. Shell obliquely oblong, obtusely angled down the middle, thin, horny, minutely granulate striated, covered with an epidermis which towards the extremity is bearded.

*Hab.* Sydney (in mud at the depth of six fathoms); Cuming.

The smallest species of the genus, of delicate horny substance, minutely grain-striated,\* covered towards the extremity with a bearded epidermis.

### Species 28. (Fig. a, b, Mus. Cuming.)

**LITHODOMUS SEMIGRANATUS.** *Lith. testā obliquē arcuatā, subirregulari, medio obtusē angulatā, pellucido-corneā, posticē levigatā, anticē granulato-striatā, epidermide pilosā versus extremitatem indutā.*

THE HALF-GRAINED LITHODOMUS. Shell obliquely arched, rather irregular, obtusely angled down the middle, transparent-horny, smooth posteriorly, granularly striated anteriorly, covered towards the extremity with a hairy epidermis.

*Hab.* — ?

This differs from the preceding species in being of a more irregular arched growth, grain-striated only on the posterior area.

### Species 29. (Fig. 29 and 32, Mus. Cuming.)

**LITHODOMUS GOSSEI.** *Lith. testā elongato-cuneiformi, umbonibus abruptē angulato-compressis, areā anticā concavā; luteo-pallide, posticē crebri-striatā, anticē validē granulo-decussatā.*

GOSSE'S LITHODOMUS. Shell elongately wedge-shaped, umbones abruptly angularly compressed, anterior area concave; yellowish, closely striated posteriorly, strongly granularly decussated anteriorly.

*Hab.* Jamaica; Gosse.

A very characteristic species, fretted with decussately-

grained sculpture on the hollow anterior area, while the posterior is finely striated.

### Species 30. (Mus. Cuming.)

**LITHODOMUS LANIGER.** *Lith. testā elongatā, solidulā, anticē acuminato-contortā, medio gibbosā, obtusē angulatā, conspicuē striatā, epidermide tenui, corneā, anticē densē pilosā.*

THE WOOLLY LITHODOMUS. Shell elongated, rather solid, anteriorly acuminate twisted, gibbous in the middle, obtusely angled, conspicuously striated, with a thin horny epidermis, anteriorly densely hairy.

*DUNKER, MS.* in Mus. Cuming.

*Hab.* Australia.

A narrow angularly distorted shell, curiously attenuated towards the anterior extremity, which is densely hairy.

### Species 31. (Mus. Cuming.)

**LITHODOMUS SPLENDIDUS.** *Lith. testā oblongā, naviformi, utrinque inflatā, radiatim striatā, margine dorsali arcuato subangulato, ventrali posticē sinuato; albidā, epidermide nitente castaneā indutā, anticē subpilosā.*

THE SPLENDID LITHODOMUS. Shell oblong, boat-shaped, inflated on each side, radiately striated, dorsal margin arched, slightly angled, ventral posteriorly sinuated; whitish, covered with a shining-chestnut epidermis, rather hairy anteriorly.

*Volsella splendida.* Dunker, Pro. Zool. Soc. 1856, p. 365.

*Hab.* Sydney.

Very broadly inflated, and covered with a beautiful shining-horny epidermis.

### Species 32. (Mus. Cuming.)

**LITHODOMUS ARGENTUS.** *Lith. testā trigono-cuneiformi, lateribus contractā, pallido-corneā, albicante, posticē elongato-striatā, anticē radiatim striatā.*

THE SILVERY LITHODOMUS. Shell triangularly wedge-shaped, contracted at the sides, transparent-horny; whitish, posteriorly elongately striated, anteriorly radiately striated.



# LITHODOMUS.—PLATE V.

*Hab.* — ?

More contractedly angled than any of the preceding species, and sculptured with fine thread-like striae, extending over each side in different directions.

Species 34. (Mus. Cuming.)

LITHODOMUS DIVARICATUS. *Lith. testis elongato-trapezina, antice attenuata, margine dorsali concavo, medio acule angulato, ventrali subcanaliculato, superficie antice concinne divaricatum tenuistriata, postice lavigata, cornea.*

THE DIVARICATE LITHODOMUS. Shell elongately trapezoid, attenuated anteriorly, dorsal margins concave, then sharply angled, ventral faintly channelled, anterior surface neatly divaricately finely striated, posterior smooth, horny.

PHILIPPI, *Zeitschrift für Malac.* 1847, p. 115.

*Hab.* West Indies

Distinguished by a characteristic variation of sculpture, the anterior portion of the shell being beautifully divaricately striated, whilst the posterior is smooth and horny.

# LITHODOMUS.

	Plate.	Species		Plate.	Species
Antillarum ( <i>Mod.</i> ), Philippi . .	II.	7	Hanleyanus, <i>Dunker</i> . . . . .	IV.	19
appendiculatus ( <i>Mod.</i> ), Philippi	IV.	21	laniger, <i>Dunker</i> . . . . .	V.	30
argenteus, <i>Reeve</i> . . . . .	V.	33	lithophagus ( <i>Myt.</i> ), Linnæus . .	II.	9
attenuatus ( <i>Mod.</i> ), Deshayes . .	III.	15	Malaccanus, <i>Reeve</i> . . . . .	IV.	20
barbatus, <i>Reeve</i> . . . . .	V.	27	Malayanus ( <i>Mod.</i> ), Philippi . . .	I.	2
bi-excavatus, <i>Reeve</i> . . . . .	IV.	22	nasutus ( <i>Mod.</i> ), Philippi . . . .	II.	10
canaliferus, <i>Hanley</i> . . . . .	IV.	25	obesus ( <i>Mod.</i> ), Philippi . . . .	I.	6
castaneus, <i>Dunker</i> . . . . .	III.	17	pessulatus, <i>Reeve</i> . . . . .	IV.	24
caudigerus, <i>Lamarck</i> . . . . .	III.	16	plumula, <i>Hanley</i> . . . . .	IV.	23
cinnamominus ( <i>Myt.</i> ), Cheimnitz	I.	5	rugiferus, <i>Dunker</i> . . . . .	IV.	18
coarctatus ( <i>Folsella</i> ), <i>Dunker</i> . .	III.	14	semigranatus, <i>Reeve</i> . . . . .	V.	28
corrugatus ( <i>Mod.</i> ), Philippi . . .	I.	1	splendidus ( <i>Folsella</i> ), <i>Dunker</i> .	V.	31
Cunningianus, <i>Dunker</i> . . . . .	II.	8	stramineus, <i>Dunker</i> . . . . .	II.	11
divaricatus, <i>Philippi</i> . . . . .	V.	34	subula, <i>Reeve</i> . . . . .	IV.	26
Gosse, <i>Reeve</i> . . . . .	V.	29	teres, <i>Philippi</i> . . . . .	III.	13
gracilis ( <i>Mod.</i> ), Philippi . . . .	I.	4	truncatus, <i>Gray</i> . . . . .	I.	3
Gruneri, <i>Philippi</i> . . . . .	III.	12			



MONOGRAPH  
OF THE GENUS  
A V I C U L A.

“ He saw the form of his promised bride,  
The sun shone on her golden hair,  
And her cheek was glowing fresh and fair  
With the breath of morn and the soft sea-air.”  
*Longfellow*







# AVICULA.

PLATE .

Genus AVICULA, Klein.

*Testa irregularis, nunc orbicularis nunc obliquè trigona, latere antico plus minus elongato-alato, fibro-laminaris, inaequalis, lacunâ pro bysso, intus plerumque margaritaceâ. Cardo edentulus, sed tuberculo obscuro in utrâque valvâ infra umbones plerumque instructus. Ligamentum lineare, in medio plus minus dilatatum. Impressio muscularis centralis.*

Shell irregular, sometimes orbicular, sometimes obliquely triangular, with the anterior side more or less elongately winged, fibro-laminar, inequivalve, having an opening for the byssus, interior generally pearly. Hinge toothless, but mostly furnished in each valve beneath the umbones with an obscure tubercle. Ligament linear, more or less dilated in the middle. Muscular impression central.

Under this head are included the Lamarckian *Aviculae* represented by the characteristic *A. macroptera* and *heleptera*, and *Meleagrinae*, of which the great Pearl Oyster, *A. margaritifera*, is the type. Though differing materially in shape, the animal is the same, and a close inspection of the shell will show that even the roundest form of *Meleagrina* possesses the rudiment of a winged process. Like all shells that live attached to rocks by a byssus, the *Aviculae* vary greatly in general form, and the same species is often so variable in growth that it is not easy to identify it by description. In substance the *Aviculae* are fibro-laminar like the *Pinnae*, and many are remarkable for the beautifully furbelowed scales which they develop, and for the exquisitely festooned and serrated character of the epidermis. The external striæ are often deposited like concentric silken ridges.

Many of the *Aviculae* secrete pearls in addition to the well-known *A. margaritifera*. Mr. Cuming possesses fine

pearls taken from the *A. macroptera*, and some of a peculiarly delicate warm hue produced by the *A. pica*.

The *Aviculae* are abundant in the tropical and subtemperate seas, and are handsomely represented on our own shores by the *A. Tarentina* of the Mediterranean. The smaller species, some of which are extremely fragile, attach themselves chiefly to bunches of Zoophytes.

Species 1. (Fig. 1 and 21, Mus. Cuming.)

AVICULA MARGARITIFERA. *Avic. testâ orbiculari, planoconvexâ, superiôrè rectâ, posticâ subsinuâtâ, ubique concentricè laminatâ, lammis versus marginem in seriebus longitudinalibus squamarum productis, squamis plus minus irregulariter contortis; griseo-olivaceâ, prope umbonem virescente.*

THE PEARLY AVICULA. Shell orbicular, flatly convex, straight at the upper part, slightly sinuated on the posterior side, everywhere concentrically laminated, laminae produced towards the margin into longitudinal rows of scales, scales more or less irregularly twisted; greyish-olive, green near the umbo.

*Mytilus margaritifera*, Linnaeus, Syst. Nat. p. 1153.

*Margarita Sinensis*, Leach.

*Avicula margaritifera*, De Roissy.

*Meleagrina margaritifera*, Lamarck.

*Avicula meleagrina*, De Blainville.

*Avicula radiata*, Leach.

*Hab.* Tropical and sub-tropical seas in both hemispheres.

Of this colossal species, the well-known Pearl Oyster of the South Seas, we have figured a young specimen at Plate VIII., to show the nature of its sculpture in an early stage of growth. As the shell advances in age, and the valves thicken, the sculpture becomes obsolete.

June, 1857.









# AVICULA.

## PLATE II.

Species 2. (Mus. Cuming.)

AVICULA MACROPTERA. *Avic. testā longitudinaliter subquadrato-oblongā, obliquā, plus minus gibbosā, fusconigricante, solidè corneā, pallidè radiatā, squamulis fuscis minutè cuspidatis versus marginem plus minus indutā; supernè dense inaequilaterali, extremitate anticā in alam angustam longissimam productā.*

THE LONG-WINGED AVICULA. Shell longitudinally somewhat squarely oblong, oblique, more or less gibbous, brown-black, solidly horny, faintly rayed, more or less covered towards the margin with minutely cuspidate brown scales; very inequilateral at the upper,

part, anterior extremity produced into a very long narrow wing.

LAMARCK, Anim. sans vert. vol. vii. p. 97.

*Hab.* Moluccas.

This fine species, besides being distinguished by the long narrow winged prolongation of the anterior side, is peculiarly rayed with pale longitudinal bands, showing the places where minute cuspidate scales have been attached. In well-preserved specimens these minute scales having the edges finely curled, cluster very densely about the margin and in the arched hollow between the body of the shell and the wing.

March, 1857.







# AVICULA.

PLATE III.

Species 3. (Mus. Brit.)

AVICULA LOTORIUM. *Avic. testā longitudinaliter oblongā, obliquā, solidiusculā, ampliter gibbosā, margaritifera, cupreo-rufā, extus fusco-nigrā corneā, decussatim striatā, superne obtusè alatā.*

THE BATH AVICULA. Shell longitudinally oblong, oblique, rather solid, largely gibbous, pearly, coppery-red, externally brown-black, horny, decussately striated obtusely winged at the upper part.

LAMARCK, Anim. sans vert. vol. vii. p. 362.

*Lavacrum capreum*, Chemnitz.

*Hab.* —?

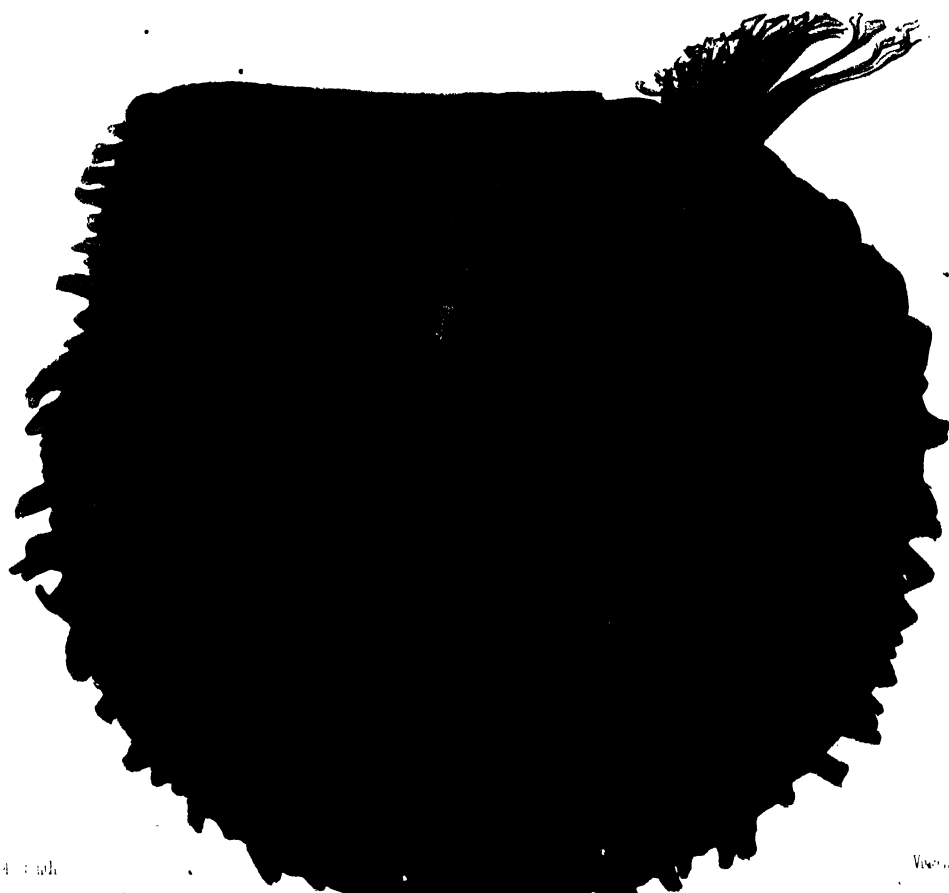
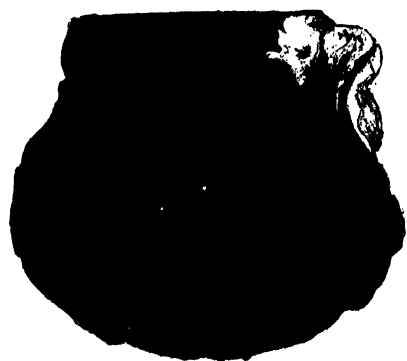
M. Deshayes regards this species as a variety of *A. macroptera*, with the anterior wing not produced. We entirely coincide with Lamarck's view, that it is distinct. The shell is of more solid growth, and more amply gibbous, while the pearly nacre, as remarked by Lamarck, is of a peculiar deep coppery-red.

March, 1857.









# AVICULA.

## PLATE IV.

### Species 4. (Mus. Cuming.)

AVICULA FLEXUOSA. *Avic. testā subquadratā, tenuiculā, compressā, subdistortā, valdē inæquilaterā, supernè rectā, posticè vix alatā, longitudinaliter flexuosè squamatā, squamis parvis, planis, cuspidatis, hic illic obsoletis, regulariter descendētibz.*

THE FLEXUOUS AVICULA. Shell somewhat square, rather thin, compressed, somewhat distorted, very inequilateral, straight at the upper part, scarcely winged posteriorly, longitudinally flexuously scaled, scales small, flat, cuspid, here and there obsolete, descending regularly.

Hab. Cape Hillsborough, North Australia; Jukes.

A shell of somewhat square growth, having rather a distorted appearance, sculptured with small cuspid scales descending in comparatively distant flexuous rays.

### Species 5. (Mus. Cuming.)

AVICULA LATA. *Avic. testā transversè oblongo-quadratā, subdistortā, valdē inæquilaterā, posticè parum alatā, latè sinuatā, concentricè densè filo-striatā, intensè rufocastaneā, squamulis minutis, irregulariter curvatis, versus marginem concentricè indutā.*

THE BROAD AVICULA. Shell transversely oblong-square, rather distorted, very inequilateral, but little winged posteriorly, broadly sinuated, concentrically densely thread-striated, dark reddish-chestnut, covered to-

wards the margin with close-set irregularly festooned minute scales.

GRAY, MS., Brit. Mus.

Hab. Port Essington and Raines' Island, Torres Straits, Australia; Lieutenant Ince.

An extremely characteristic species, of a peculiar reddish-chestnut colour, sculptured throughout with close-set thread-like concentric striae of growth, and covered towards the margin with minute irregularly festooned scales, which have the appearance of a dense pile.

### Species 6. (Mus. Cuming.)

AVICULA CUMINGII. *Avic. testā orbiculari, plano-convexā, supernè rectā, posticè vix sinuatā, ubique concentricè et longitudinaliter squamatā, squamis longitudinalibus crispato-spathulatis, valdē promiscuis, intensè virescente-olivaceis, pallidè radiatā.*

CUMING'S AVICULA. Shell orbicular, flatly convex, straight at the upper part, scarcely sinuated posteriorly, everywhere concentrically and longitudinally scaled, longitudinal scales crispatly spathulate, very promiscuous, dark greenish-olive, faintly rayed.

Hab. Lord Hood's Island, Pacific Ocean (attached to rocks, at the depth of ten fathoms); Cuming.

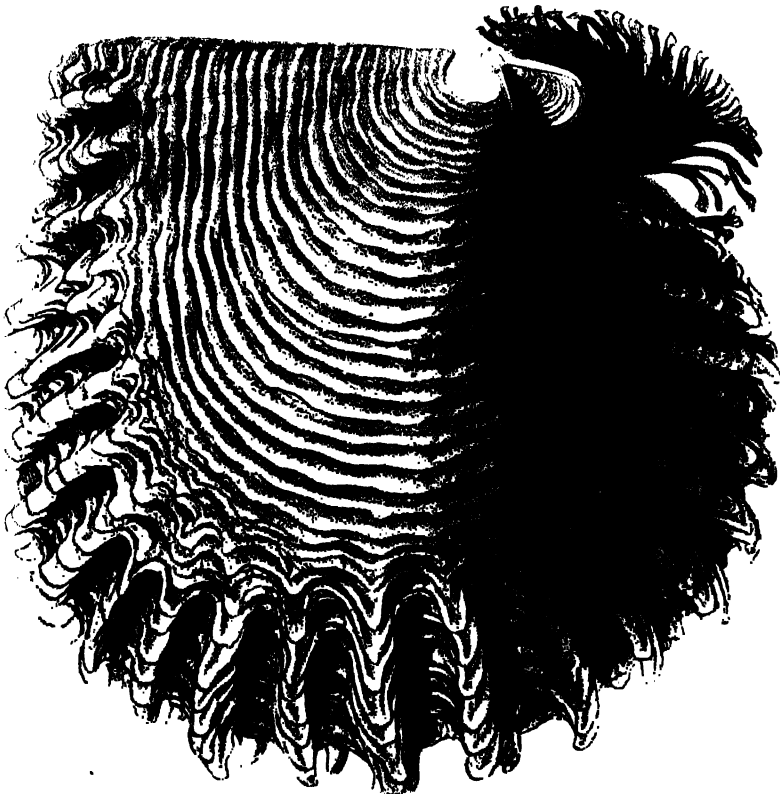
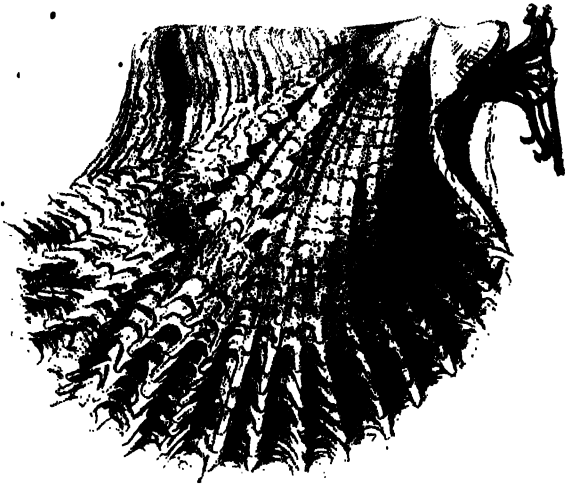
This fine species is quite remarkable for the dense forest of scales with which it is sculptured throughout, the scales being of an irregular crispatly spathulate growth, developed in the most fantastic and promiscuous manner.

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# AVICULA.

PLATE V.

Species 7. (Fig. 7 and 8, Mus. Cuming.)

AVICULA FLABELLUM. *Avic. testā obliquè suborbiculari, posticè latè subsinuatā, pellucido-corneā, squamis lanceolatis fragilissimis concentricè longitudinaliter radiatā, pallidè olivaceā, purpureo-nigricante irregulariter radiatim tinctā.*

THE FAN AVICULA. Shell obliquely suborbicular, slightly broadly sinuated posteriorly, transparent horny, concentrically and longitudinally rayed with extremely fragile spear-like scales, pale olive, irregularly radiately smeared with purple-black.

*Hab.* Venezuela.

The characteristic sculpture of this species, which is of a comparatively fragile horny texture, consists of a mass of more fragile lanceolate scales, arranged for the most part with tolerable regularity. The shell is more or less radiately smeared with purple-black.

Species 9. (Mus. Cuming.)

AVICULA BARBATA. *Avic. testā orbiculari, supernè rectā, plano-convexā, olivaceo-flavicante, concentricè laminatā, versus marginem densè squamatis, squamis plano-cochleariformibus, regulariter sequentibus.*

THE BEARDED AVICULA. Shell orbicular, straight at the upper part, flatly convex, olive-yellow, concentrically laminated, densely scaled towards the margin, scales flatly spoon-shaped, following regularly.

*Hab.* Panama (under stones at low water); Cuming.

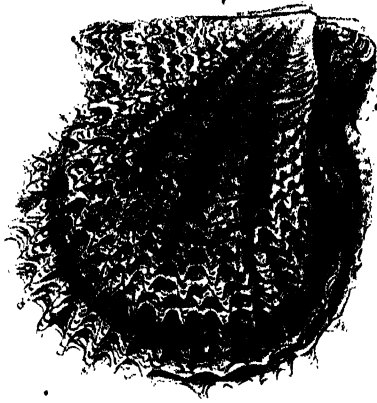
Distinguished from *A. Cumingii* by the regular sequence of the scales, which, so far as we have observed, are only developed near the margin, and by its yellower tone of colour. The species is also from a different locality, and possesses a distinct uniformity of character throughout.

March, 1857.





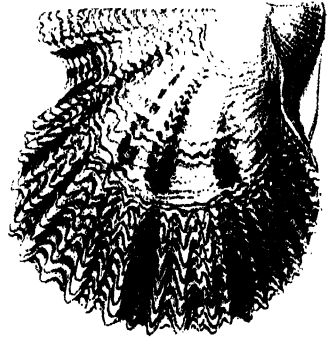




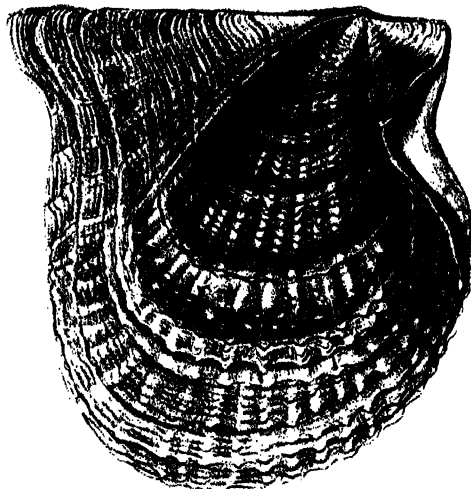
11.



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13.



14.

# AVICULA.

## PLATE VI.

### Species 10. (Mus. Cuming.)

AVICULA ALA-PERDICIS. *Avic. testā subquadrato-orbiculari, obliquè convexā, supernè rectā, posticè angulato-sinuatā, semipellucido-cornēā, purpureo-rufescente radiatā, undique densè squamatā, squamis trigono-lanceolatis, fragilibus, peculiariter marmoratā.*

THE PARTRIDGE-WING AVICULA. Shell somewhat squarely orbicular, obliquely convex, straight at the top, posteriorly angularly sinuated, semitransparent, horny, rayed with purple-red, densely scaled throughout, scales triangularly lanceolate, fragile, peculiarly mottled.

*Hab.* West Indies.

Of this horny species, delicately rayed with purple-red, the scales are prominently festooned in their mode of development, whilst in substance and appearance they are fragile and peculiarly mottled.

### Species 11. (Mus. Cuming.)

AVICULA IMBRICATA. *Avic. testā subquadratā, planiusculā, posticè angulato-productā, parum sinuatā, olivaceo-flavicante, undique densè imbricato-squamatā, squamis cuspidatis, appressis, regularibus.*

THE IMBRICATED AVICULA. Shell somewhat square, rather flat, posteriorly angularly produced, but little sinuated, olive-yellow, everywhere densely imbricately scaled, scales cuspid, appressed, regular.

*Hab.* Philippine Islands; Cuming.

The scales of this species are very numerous, flatly appressed, pointed, and of unusually regular growth.

### Species 12. (Mus. Cuming.)

AVICULA MURICATA. *Avic. testā subobliquè quadratā, solidiusculā, leviter convexā, posticè arcuato-sinuatā, flavicante, marmorato-nigro interruptè strigatā, versus marginem densè squamatā, squamis angulato-lanceolatis, regularibus.*

THE PRICKLY AVICULA. Shell somewhat obliquely square, rather solid, slightly convex, posteriorly arcuately sinuated, pale yellow, interruptedly streaked with mottled black, densely scaled towards the margin, scales angularly lanceolate, regular.

*Hab.* Philippine Islands.

The colouring of this species is characteristic, the surface being of a yellowish cast, interruptedly rayed with marbled-black, and the scales are prominently pointed.

### Species 13. (Mus. Cuming.)

AVICULA LENTIGINOSA. *Avic. testā subquadratā, posticè latè brevi-alatā, parum sinuatā, planiusculā, spadicæo-fuscescente, albo radiatim lentiginosā, irregulariter laminato-squamatā, squamis simplicibus, hic illic obsoletis.*

THE FRECKLED AVICULA. Shell somewhat square, posteriorly broadly short-winged, but little sinuated, rather flat, fawn-brown, radiately freckled with white, irregularly laminately scaled, scales simple, here and there obsolete.

*Hab.* Moluccas.

In this species the scales are only obscurely developed with the irregular laminæ of growth. The colour of the shell is a pale fawn-brown, distinguished by a characteristic pattern of mottled-white rays.







15.



16.



17.

# AVICULA.

## PLATE VII.

Fig. 14. (Mus. Cuming.)

The shell here figured is intended to represent another state of the curiously mottled species *A. ala-perdicis*, described at Fig. 10 in the preceding Plate.

Species 15. (Mus. Cuming.)

AVICULA PRÆTEXTA. *Avic. testâ subquadrata, posticè latè sinuatâ, lævigatâ, livido-spadiceâ, maculis pallidis radiatâ, maculis lineis opaco-albis corrugatis.*

THE LACED AVICULA. Shell somewhat square, posteriorly broadly sinuated, smooth, livid-fawn, rayed with pale blotches, blotches wrinkled with opaque-white lines.

*Hab.* Island of Corrigidor, Philippines; Cuming.

Of a peculiar livid-fawn colour, rayed with pale oblong blotches, which are curiously wrinkled across with opaque-white lines.

Fig. 16. (Mus. Cuming.)

A variety of *A. flabellum*, represented at Pl. V. Fig. 7, which it is necessary to give in illustration of its exquisite variety of sculpture.

Species 17. (Mus. Cuming.)

AVICULA REGULATA. *Avic. testâ subquadrata, posticè latè alata, planâ, tenui, subcornèâ, spadiceâ, rufo-linctâ, vel luteo-virescente, albo radialâ, squamatâ, squamis tenuibus, planatis, subelongatis, distantibus.*

THE THATCHED AVICULA. Shell somewhat square, posteriorly broadly winged, flat, thin, sub-horny, fawn, tinged with red or yellowish-green, rayed with white, scaled, scales thin, flattened, rather elongated and distant.

*Hab.* Moreton Bay, Australia.

A thin broadly winged species, scarcely sinuated, of rather horny substance, of a reddish or yellowish-green hue, faintly white-rayed, armed in the rays with rather distant, prolonged, thin, flattened scales.









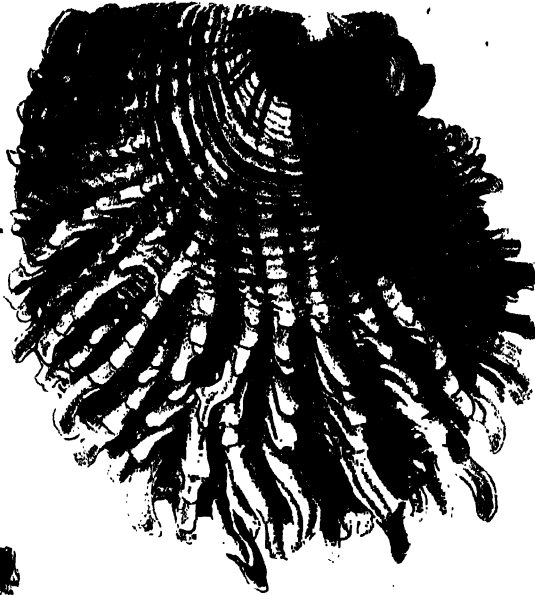
19.



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23.

# AVICULA.

## PLATE VIII.

### Species 18. (Mus. Cuming.)

AVICULA HYSTRIX. *Avic. testā subglobosā, tenui, cornēā, virescente, pallidē radiatā, spinis viftaformibus elongatis, promiscuē curvatis, e laminis tennibus projectis, indutā.*

THE PORCUPINE AVICULA. Shell subglobose, thin, horny, green, faintly rayed, covered with long ribbon-like spines, promiscuously curved, projected from fine laminæ.

*Hab.* — ?

This little species of thin globular form is distinguished from all other species of the genus by its long promiscuously curved ribbon-like spines.

### Species 19. (Mus. Cuming.)

AVICULA RUTILA. *Avic. testā obliquē subquadratā, tenui, levigatā, pellucidā, æneo-rufescente.*

THE RUDDY AVICULA. Shell obliquely subquadrate, thin, smooth, transparent, coppery-red.

*Hab.* Australia; Strange.

Of very simple structure, being of a thin transparent coppery-red substance, somewhat rudely developed, without any indication of scales or over-lapping laminæ.

### Species 20. (Mus. Cuming.)

AVICULA PERVIRIDIS. *Avic. testā obliquē ovatā, convexiusculā, supernè latè alatā, cornēā, perviridi, pallidē radiatā, squamis paucis eximius mucronatis prope marginem.*

THE GREEN AVICULA. Shell obliquely ovate, rather convex, broadly winged at the upper part, horny, bright green, faintly rayed, with a few delicate pointed scales near the margin.

*Hab.* Australia; Strange.

Of an unusually bright-green horny substance, faintly rayed, with a few flattened pointed scales in the rays near the margin.

### Fig. 21. (Mus. Cuming.)

The young state of the large *Avicula margaritifera*, described and figured at Pl. I.

### Species 22. (Mus. Cuming.)

AVICULA 'PULCHRELLA. *Avic. testā perobliquē ovatā, supernè angustiore, convexiusculā, tenuissimā, pellucidocornēā, flammulis rufis angustis radiatā, maculis nigris lineis subtilibus opaco-albis commistis.*

THE PRETTY AVICULA. Shell very obliquely ovate, narrower at the upper part, rather convex, very thin, transparent horny, rayed with narrow red flames, intermixed with black blotches and fine opake-white lines.

*Hab.* Philippine Islands; Cuming.

An exceedingly transparent shell, curiously painted with interrupted rays of black spots, narrow red flames and fine opake-white lines. The shell is of very oblique growth, and broader at the base than at the upper part.

### Species 23. (Mus. Cuming.)

AVICULA RADULA. *Avic. testā subquadratā, planiusculā, irregulari, circa umbones levigatā, doinde squamulis acutis fimbriatis appressis armatā, albā, luteo-fineatā.*

THE RASP AVICULA. Shell somewhat square, rather appressed, irregular, smooth around the umboes, then armed with flat pointed frilled scales, white, tinged with yellow.

*Hab.* — ?

A yellow-stained opake-white shell, of rude irregular growth, beset with appressed sharp-pointed frilled scales.

### Species 24. (Mus. Cuming.)

AVICULA OCCA. *Avic. testā obliquē ovatā, convexiusculā, præsertim volvā dextrā, cornēā, solidiusculā, olivaceā, nigro interruptè radiatā, conspicuē squamatā, squamis planis, crispatis, marmoratis.*

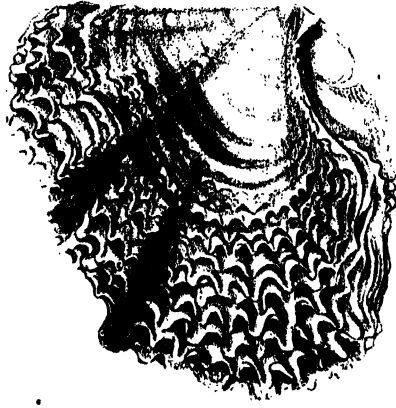
THE NARROW AVICULA. Shell obliquely ovate, rather convex, especially the right valve, horny, rather solid, olive, rayed with interrupted black, conspicuously scaled, scales flat, crisp, mottled.

*Hab.* Red Sea.

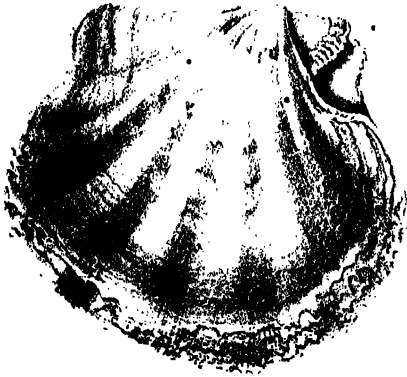
Allied to *A. ala-perdicis*, from which it differs chiefly in the scales being larger and more regularly festooned.



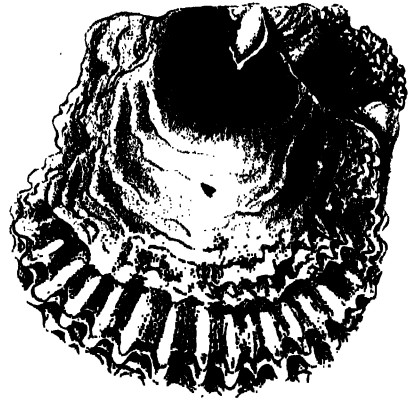




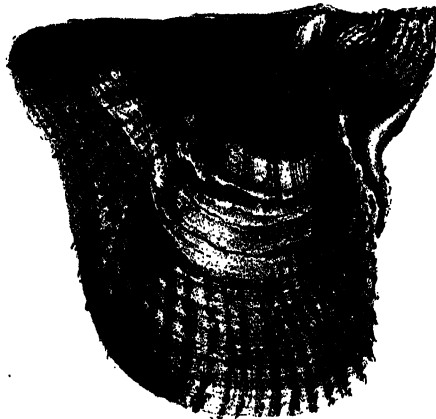
25.



26.



27.



# AVICULA.

## PLATE IX.

### Species 25. (Mus. Cuming.)

AVICULA FIMBRIATA. *Avic. testâ subquadrato-ovatâ, supernè latâ, tenui, planiusculâ, levigatâ, irregulari, squamis laminaribus versus marginem latè fimbriatâ, pallidè spadiceâ.*

THE FURBELOWED AVICULA. Shell somewhat squarely ovate, broad at the upper part, thin, rather flat, smooth, irregular, broadly furbelowed towards the margin with laminar scales, pale fawn-colour.

*Hab.* North-west coast of Australia (under pieces of coral at low water); J. E. Dring.

Of rather slight irregular structure, thin and flat, ornamented towards the margin with conspicuous rows of broadly frilled laminae.

### Species 26. (Mus. Cuming.)

AVICULA ANOMIOIDES. *Avic. testâ subcirculari, sub-Pectiniformi, tenui, levigatâ, pellucido-albâ, virrescente pallidè radiatâ, ad marginem obsolete rugoso-laminatâ.*

THE ANOMIA-LIKE AVICULA. Shell nearly circular, somewhat Pecten-shaped, thin, smooth, transparent-white, faintly rayed with pale green, obsoletely roughly laminated at the margin.

*Hab.* — ?

A very characteristic species, of semitransparent white Anomia-like substance, rayed with pale green in a manner very unusual in this genus, the edge being rudely jagged with short broken laminae.

### Species 27. (Mus. Cuming.)

AVICULA SUGILLATA. *Avic. testâ subquadrato-ovatâ, irre-*

*gulari, levigatâ, pellucido-albâ, purpureo-nigricante circa umbones tinctâ et radiatâ, fasciis opaco-albis prope marginem radiatâ, deinde laminis planis fimbriatâ.*

THE BRUISED AVICULA. Shell somewhat squarely ovate, irregular, smooth, transparent-white, rayed and stained about the umbones with purple-black, rayed near the margin with opaque-white bands, then frilled with flat laminae.

*Hab.* Cape Hillsborough, North Australia; Jukes.

This shell is of the same transparent white Anomia-like substance as the preceding species, but differs materially in form, and is more or less stained with purple-black. Near the margin it is curiously marked with opaque-white radiating bands, and at the edge is broadly flatly frilled.

### Species 28. (Mus. Cuming.)

AVICULA CETRA. *Avic. testâ subquadratâ, supernè latissimâ, levigatâ, sordidè spadiceâ, irregulariter obsolete laminatâ, versus marginem densè radiatim squamatâ, squamis minutis, planis, cuspidatis, subdistantibus, peculiariter marmoratis.*

THE SHIELD AVICULA. Shell somewhat square, very broad at the upper part, smooth, dirty fawn-colour, irregularly obsoletely laminated, towards the margin densely radiately scaled, scales minute, flat, cuspid, rather distant, peculiarly mottled.

*Hab.* — ?

The chief characteristic of this thin broadly square species is its sculpture of minute flat cuspid mottled scales, arranged in regular radiating rows.

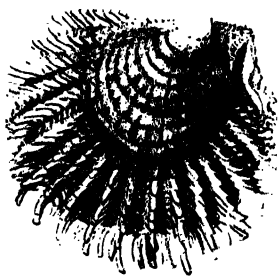




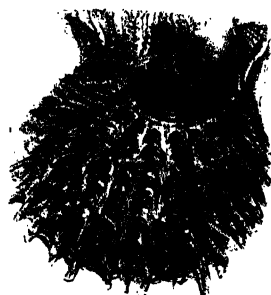




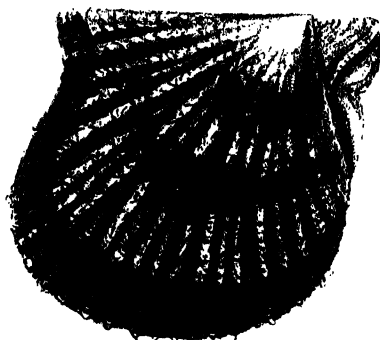
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30.



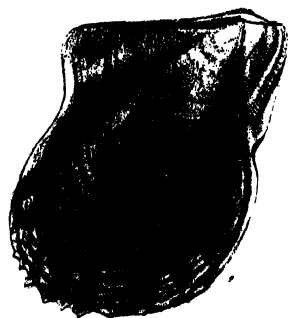
31.



32.



33.



34.



Fig. del a. l. h. i.

# AVICULA.

## PLATE X.

Species 29. (Fig. 29 and 31, Mus. Cuming.)

AVICULA LACUNATA. *Avic. testâ subquadrato-ovalâ, convexiusculâ, tenui, lutescente-corneâ, conspicuè dense laminatâ, laminis in spinis lacunatis fimbriatis projectis.*

THE GUTTERED AVICULA. Shell somewhat squarely ovate, rather convex, thin, yellowish-horny, conspicuously densely laminated, the laminae projecting into festooned guttered spines.

*Hab.* Australia.

The surface of this species is remarkable for its very elaborate system of horny laminae, projected into festooned guttered spines.

Species 30. (Mus. Cuming.)

AVICULA IRRASA. *Avic. testâ subcirculari, tenuiculâ, corneâ, concentricè laminato-striatâ, deinde squamis angustis planis dense regulariter obsitâ, pallidè spaldiceo-rufulâ.*

THE UNSHORN AVICULA. Shell nearly circular, rather thin, horny, concentrically laminately striated, then densely regularly beset with flat narrow scales, light fawn-red.

*Hab.* —?

A light nearly circular species, of a delicate fawn-red colour, thickly rayed with close-set flattened narrow scales.

Species 32. (Mus. Cuming.)

AVICULA ÆRATA. *Avic. testâ subquadratâ, tenuiculâ, convexâ, præsertim valvâ dextrâ, posticè subsinuâtâ, æreo-lutescente, obsolete tenuilaminatâ, squamis tenuibus numerosis parvis planis marmoratis obsitâ.*

THE BRONZE AVICULA. Shell somewhat square, rather thin, convex, especially the right valve, posteriorly slightly sinuated, bronze-yellow, obsoletely finely

laminated, beset with numerous small thin flat mottled scales.

*Hab.* Australia.

Chiefly distinguished by its yellowish-bronze hue, thin in substance, and regularly beset with small flat mottled scales.

Species 33. (Fig. 33 and 34, Mus. Cuming.)

AVICULA NEBULOSA. *Avic. testâ obliquè quadratâ, convexiusculâ, præsertim valvâ dextrâ, solidiusculâ, posticè subsinuâtâ, intus vixidè margaritacea, ætus rugosâ, muticâ, sordidè albâ, nigro profusè nebulosâ.*

THE CLOUDED AVICULA. Shell obliquely square, rather convex, especially the right valve, rather solid, posteriorly slightly sinuated, richly pearly in the interior, externally rough, without sculpture, dull white, profusely clouded with black.

CONRAD, Journ. Acad. Nat. Soc. Philadelphia, vol. vii.

*Hab.* Sandwich Islands.

A rather solid black clouded species, void of any external sculpture, remarkable for the rich delicate golden hue of its internal naere.

Species 35. (Mus. Cuming.)

AVICULA IRRADIANS. *Avic. testâ sub-Pecteniformi, irregulari, planiusculâ, lœvigatâ vel obsolete laminatâ circa umbones, deinde rudè squamatis, squamis crispatis, valdè irregularibus; albidâ, rufo-radiatâ.*

THE RAYED AVICULA. Shell somewhat Pecten-shaped, irregular, rather flat, smooth or obsoletely laminated around the umbones, then rudely scaled, scales crisp, very irregular; whitish, rayed with red.

*Hab.* Australia.

An irregularly formed species, of whitish hue, rayed in a characteristic manner with red.



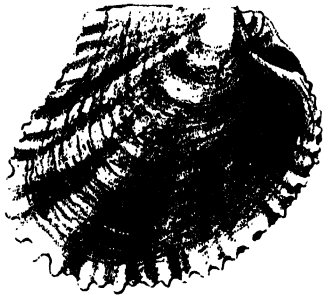




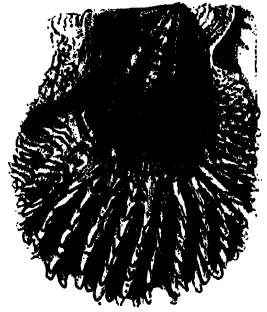
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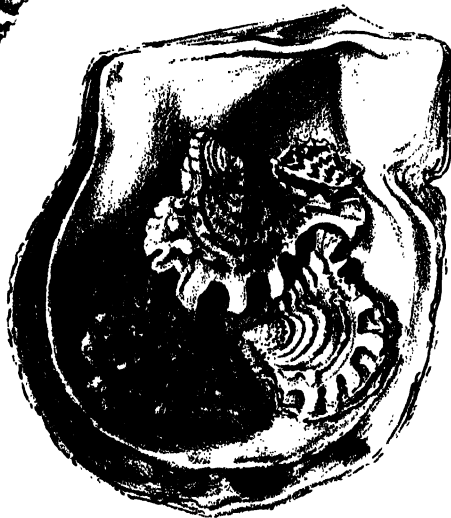
38.



39.



40.



# AVICULA.

## PLATE XI.

### Species 36. (Mus. Cuming.)

AVICULA ZEBRA. *Avic. testâ perobliquè trapezoidâ, supernè latâ, rectâ, posticè ex sinuâtâ, medio elongato-converâ, levigatâ, pellucido-corneâ, lineis nigricantibus distantibus promiscuè virgatâ.*

THE ZEBRA AVICULA. Shell very obliquely trapezoid, broad and straight at the upper part, posteriorly scarcely sinuated, elongately convex in the middle, smooth, transparent horny, promiscuously striped with distant black-brown lines.

*Hab.* Moreton Bay, Australia.

This little *Avicula*, of which three specimens are exhibited in the accompanying figure, attached by their byssus to a bunch of *Sertularie*, is of a peculiarly oblique form and bright transparent horny substance, promiscuously striped with distant black-brown lines.

### Species 37. (Mus. Cuming.)

AVICULA FLAMMATA. *Avic. testâ obliquè quadratâ, subdepressâ, supernè angustâ, pellucido-corneâ, flammis rufo-fuscis fasciatim radiatâ.*

THE FLAMED AVICULA. Shell obliquely square, rather depressed, narrow at the upper part, transparent horny, rayed with bands of red-brown flames.

*Hab.* Philippine Islands; Cuming.

A small transparent horny species, of somewhat rude oblique growth, rayed with bands of red-brown flames, and having a delicate tortoise-shell aspect.

### Species 38. (Mus. Cuming.)

AVICULA SCALPTA. *Avic. testâ obliquè quadratâ, supernè angustiusculâ, converâ; pallidè pellucido-corneâ, lineis capillaribus opaco-albis, promiscuè divergentibus, radiatâ.*

THE SCRATCHED AVICULA. Shell obliquely square, rather narrow at the upper part, convex; pale transparent horny, rayed with opaque-white hair-lines, promiscuously diverging.

*Hab.* Australia.

A rather convex shell, of a pale, horny texture, curiously marked with opaque-white hair-lines, promiscuously diverging off.

### Species 39. (Mus. Cuming.)

AVICULA PERNOIDES. *Avic. testâ obliquè circulari, supernè subangustâ, planâ, solidiusculâ, rugosâ, muticâ, ad marginem irregulariter crenatâ; lutescente-albâ, purpureo-nigro radiatâ et conspicuè marmoratâ.*

THE PERNA-LIKE AVICULA. Shell obliquely circular, rather narrow at the upper part, flat, rather solid, rough, without external sculpture, irregularly notched at the margin; yellowish-white, rayed and conspicuously mottled with purple-black.

*Hab.* — ?

The most noticeable feature in this species is its bold, purple-black marbled painting, which is particularly conspicuous in the marginal interior.

### Species 40. (Mus. Cuming.)

AVICULA ASSULÂ. *Avic. testâ subquadrato-ovalâ, solidiusculâ, posticè subsinuâtâ, prope umbones obsolete laminatâ, deinde squamis lanceolatis fragilibus fimbriatim obsitâ; subcorneâ, purpureo-rufo radiatâ et marmoratâ.*

THE SLAB AVICULA. Shell somewhat squarely ovate, rather solid, slightly sinuated posteriorly, obsoletely laminated near the umbones, then beset with festoons of fragile lanceolate scales; somewhat horny, rayed and mottled with purple-red.

*Hab.* West Indies.

A simple stout horny shell, rayed and mottled with purple-red, densely beset towards the margin with festoons of fragile lanceolate scales.

### Species 41. (Mus. Cuming.)

AVICULA CHAMOIDES. *Avic. testâ subquadrato-circulari, tenui, corneâ, concentricè laminatâ, laminis plus minus ampliter ramosis; olivaceâ, undato-nigro maculatâ.*

THE CHAMA-LIKE AVICULA. Shell somewhat squarely circular, thin, horny, concentrically laminated, laminæ more or less largely branched; olive, blotched with waved black.

*Hab.* — ?

A pretty horny species, of which a cluster of four specimens is represented within a valve of *A. margaritifera*, remarkable for the bold Chama-like branching out of the concentric laminæ.





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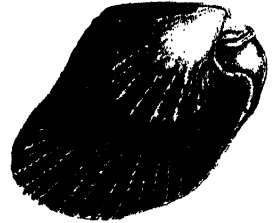
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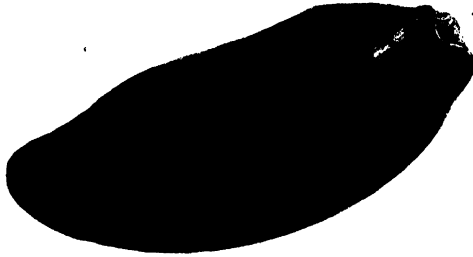
42.



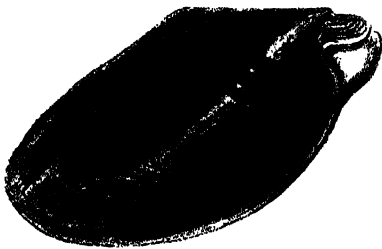
43a.



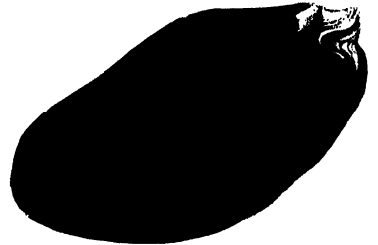
44a.



45.



43b.



44b.



46

# AVICULA.

## PLATE XII.

Species 42. (Mus. Cuming.)

AVICULA PUNCTULATA. *Avic. testā obliquē ovalā, posticē subsinnatā, cornēā, solidiusculā, lævigatā, vividē olivaceo-viridi, punctulis minutis opaco-albis radiatā.*

THE DOTTED AVICULA. Shell obliquely ovate, slightly sinuated posteriorly, horny, rather stout, smooth, bright olive-green, rayed with minute opaque-white dots.

*Hab.* — ?

A rather stout horny species, of a particularly bright olive-green colour, rayed throughout with minute opaque-white dots.

Species 43. (Fig. a, b, Mus. Cuming.)

AVICULA ELECTRINA. *Avic. testā oblongā, plus minus productā, convexiusculā, lævigatā, vividē rufo-aurantiā, pallidē radiatā, interdum punctulis opaco-albis aspersā, valvā dextrā prope umbonem plus minus nigro maculatā.*

THE AMBER AVICULA. Shell obliquely oblong, more or less produced, rather convex, smooth, bright reddish-orange, faintly rayed, sometimes sprinkled with opaque-white dots, right valve more or less blotched with black near the umbo.

*Hab.* Moluccas.

A species of characteristic oblique oblong growth, remarkable for its bright reddish-orange colour.

Species 44. (Fig. a, b, Mus. Cuming.)

AVICULA ALA-CORVI. *Avic. testā obliquē oblongā, planā, lingulatā, lævigatā, intensē purpureo-nigro punctulis opaco-albis interdum aspersā, sæpe albā prope umbones, purpureo-nigro maculatā.*

THE CROW'S-WING AVICULA. Shell obliquely oblong, flat, lingulate, smooth, deep purple-black, sometimes sprinkled with opaque-white dots, often white near the umbones, blotched with purple-black.

*Ala corvi*, Chemnitz, Conch. Cab. vol. viii. p. 144. pl. 81. f. 727.

*Avicula lingulata*, Deshayes.

*Hab.* Red Sea.

An obliquely oblong depressed lingulate form, of a characteristic deep purple-black colour, sometimes sprinkled with opaque-white dots.

Species 45. (Mus. Cuming.)

AVICULA SMARAGDINA. *Avic. testā elongato-oblongā, perobliquā, irregulari, convexā, lævigatā, intensē smaragdina, valvā dextrā saturatē maculatā.*

THE EMERALD-GREEN AVICULA. Shell elongately oblong, very oblique, irregular, convex, smooth, dark emerald-green, right valve darker-blotched.

*Hab.* Moluccas?

This singular species is of a peculiar narrow oblique oblong form, of a conspicuous uniform dark green colour.

Species 46. (Mus. Cuming.)

AVICULA MALLEOIDES. *Avic. testā perobliquē lingulatā, depresso-planā, lævigatā, irregulari, virecente-albā.*

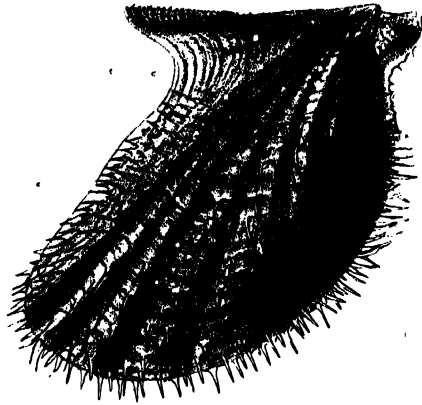
THE MALLEUS-LIKE AVICULA. Shell very obliquely lingulate, depressly flattened, smooth, irregular, greenish-white.

*Hab.* Australia.

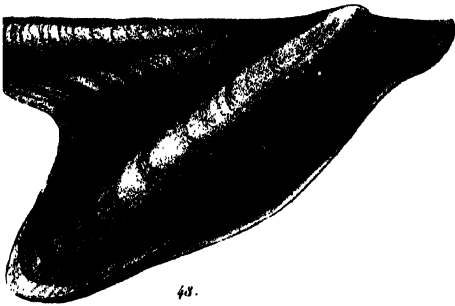
Very like a *Mallus* in form and want of colour, and also in being void of sculpture.



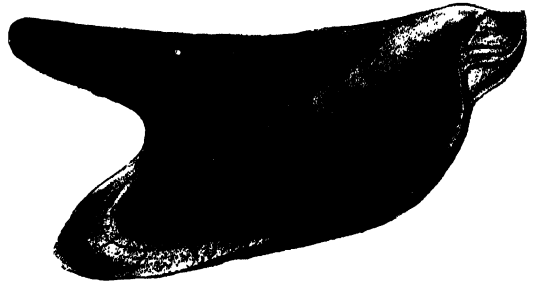




42 a.



43.



44.



47 b.

# AVICULA.

PLATE XIII.

Species 47. (Fig. *a, b*, Mus. Cuming.)

AVICULA TARENTINA. *Avic. testâ obliquè ovatâ, posticè acutè alatâ, levigatâ vel obsoletè costatâ, concentricè fibroso-luminatâ, laminis spinis muricatis obsitâ; sordidè olivaceâ, purpurascente-fusco radiatâ.*

THE TARENTUM AVICULA. Shell obliquely ovate, posteriorly sharply winged, smooth or obsoletely ribbed, concentrically fibrously laminated, laminæ beset with prickly spines; dirty olive, rayed with purplish-brown.

*Mytilus hirundo, pars*, Linnæus, Syst. Nat. 12th edit. p. 1159.

*Avicula hirundo*, Turton.

*Avicula Tarentina*, Lamarck.

*Avicula falcata*, Lamarck.

*Avicula aculeata*, Sowerby.

*Avicula Anglica*, Brown.

*Avicula Atlantica*, Brown.

*Hab.* Mediterranean.

This well-known species, which is not uncommon in the Mediterranean, occurs with rarity on our own coast. The prickly spines are projected from its fibrous epidermis.

Species 48. (Mus. Cuming.)

AVICULA IRIDESCENS. *Avic. testâ obliquè trigonâ, convexiusculâ, posticè latè sinuatâ, striis minutis undu-*

*latis undique exsculptâ, versus marginem fimbriatis; aurantio-rufâ, subiridescente.*

THE IRIDESCENT AVICULA. Shell obliquely triangular, rather convex, posteriorly broadly sinuated, sculptured throughout with fine waved striae, festooned towards the margin; orange-red, somewhat iridescent.

*Hab.* Moluccas.

Of very oblique growth, but not materially winged, of a bright orange-red colour, having a bronze or iridescent hue.

Species 49. (Mus. Cuming.)

AVICULA CASTANEA. *Avic. testâ subangustè transversâ, perobliquâ, convexiusculâ, posticè subproductâ, minutè undato-striatâ, striis versus marginem fimbriatis; intense purpureo-castaneâ.*

THE CHESTNUT AVICULA. Shell somewhat narrowly transverse, very oblique, rather convex, posteriorly somewhat produced, finely wave-striated, striae festooned towards the margin; dark purple-chestnut.

*Hab.* Island of Mindoro, Philippines; Cuming.

The form of this species is narrower transversely and more winged than the preceding species, and in colour it is of a very dark purple-chestnut. The sculpture is similar.









Vincent Brooks Imp.

# AVICULA.

## PLATE XIV.

### Species 50. (Mus. Cuming.)

**AVICULA FIBROSA.** *Avic. testâ subovalâ, posticè subproductâ, tenuiculâ, convexâ; castaneo-rufâ, epidermide fibrosâ densè fimbriatâ, quasi squamulis, indutâ.*

**THE FIBROUS AVICULA.** Shell somewhat ovate, posteriorly rather produced, rather thin, convex; chestnut-red, covered with a fibrous epidermis, elaborately festooned like scales.

*Hab.* Catanaun, Island of Luzon, Philippines; Cuming.

A species of elegant form, moderately winged, covered with a fibrous epidermis, developed in scale-like festoons.

### Species 51. (Mus. Cuming.)

**AVICULA TROCHILUS.** *Avic. testâ elongato-trigonâ, obliquâ, convexiusculâ, posticè acutè alatâ, levigatâ; viridè aurantio-rufâ, supernè aureo-lutescente.*

**THE HUMMING-BIRD AVICULA.** Shell elongately triangular, oblique, rather convex, posteriorly sharply winged, smooth; bright orange-red, golden-yellow towards the upper part.

*Hab.* Philippine Islands; Cuming.

This little winged species is remarkable for its bright orange-red colouring, passing towards the upper part into golden-yellow, distinct in tone from that of *A. crocea*.

### Species 52. (Mus. Cuming.)

**AVICULA AQUATILIS.** *Avic. testâ elongato-transversâ, intense purpureo-castaneâ, posticè conspicuè alatâ, alâ longissimâ, latâ, fortiter plicato-undatâ.*

**THE RIPPLED AVICULA.** Shell elongately transverse, deep purple-chestnut, posteriorly conspicuously winged, wing long, broad, strongly plicately waved.

*Hab.* Moluccas.

The wing of this little dark purple-chestnut species is much elongated and broad in proportion to the body of the shell, and strongly rippled in relief throughout.

### Species 53. (Mus. Cuming.)

**AVICULA PERUVIANA.** *Avic. testâ ovatâ, convexâ, subglobosâ, solidiusculâ, supernè latâ, posticè parum sinuatâ; castaneâ, pallidè radiatâ, epidermide fibrosâ fimbriatâ indutâ.*

**THE PERUVIAN AVICULA.** Shell ovate, convex, sub-globose, rather solid, broad at the upper part, but little sinuated posteriorly; chestnut, faintly rayed, covered with a fibrous festooned epidermis.

*Hab.* Peru.

A large subglobose shell, of rather solid growth, broadly developed along the hinge-margin, and but little sinuated on the posterior side.

### Species 54. (Mus. Cuming.)

**AVICULA SCABRIUSCULA.** *Avic. testâ elongato-transversâ, perangustâ, posticè conspicuè alatâ; sordidè albâ, subpellucido-corneâ, epidermide pulcherrimâ eximie scabrosâ indutâ, ad alam undatâ.*

**THE ROUGH AVICULA.** Shell elongately transverse, very narrow, posteriorly conspicuously winged; dull white, subtransparent horny, covered with a beautiful delicately scaled epidermis, rippled on the wing.

*Hab.* Australia.

A characteristic elongately winged species, of a pale sub-transparent texture, covered with a very peculiar scabrous epidermis.

### Species 55. (Mus. Cuming.)

**AVICULA PRODUCTA.** *Avic. testâ subtrigonâ, convexâ, obliquè elongato-productâ, perangustâ, posticè acutè alatâ, peculiariter profundè sinuatâ; viridè purpureo-castaneâ, epidermide eximie fibrosâ versus marginem indutâ.*

**THE PRODUCED AVICULA.** Shell somewhat triangular, convex, obliquely elongately produced, very narrow, posteriorly sharply winged, peculiarly deeply sinuated; bright purple-chestnut, covered towards the margin with a fine fibrous epidermis.

*Hab.* Red Sea.

This interesting species is chiefly remarkable for its peculiarly narrow obliquely produced form, and sharp wing.

### Species 56. (Mus. Cuming.)

**AVICULA SIGNATA.** *Avic. testâ subtrigono-quadratâ, obliquè productâ, posticè perangustè elongato-alatâ, latè sinuatâ; nigricante-castaneâ, epidermide densè fimbriatâ fibrosâ indutâ.*

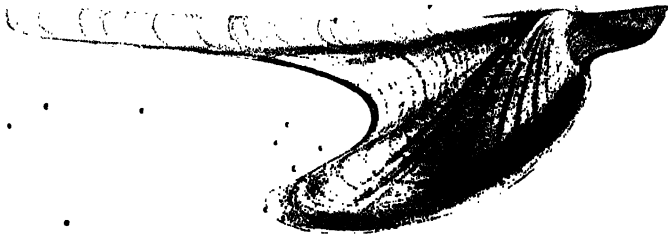
**THE REMARKABLE AVICULA.** Shell somewhat triangularly square, obliquely produced, posteriorly very narrowly elongately winged, broadly sinuated; blackish-chestnut, covered with an elaborately festooned fibrous epidermis.

*Hab.* — ?

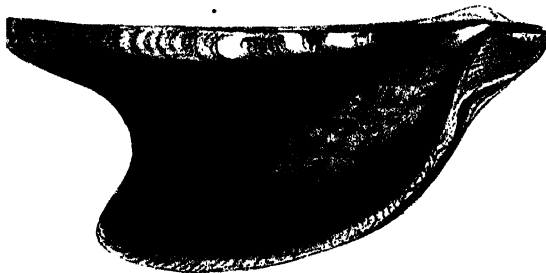
A fine typical species of this winged section of the genus, of very dark chestnut-colour, covered with a very characteristic festooned fibrous epidermis.







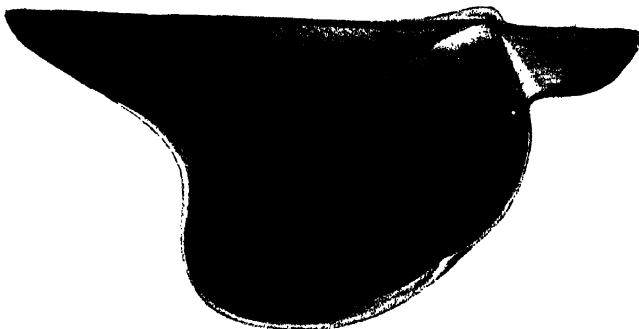
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# AVICULA.

PLATE XV.

Species 57. (Mus. Cuming.)

AVICULA CROCEA. *Avic. testā subangustè obliquā, convexā, levigatā, striis simplicibus incrementi, alā longissimā, gracili; vividè croceo-miniatā, fasciis castaneis angustis radiatā.*

THE SAFFRON AVICULA. Shell rather narrowly oblique, convex, smooth, with simple stræ of growth, wing very long and slender; bright saffron-red, rayed with narrow chestnut bands.

CHEMNITZ, Conch. Cab. vol. xi. pl. 205. f. 2025, 2026.

*Avicula Chinensis*, Leach.

*Hab.* Island of Mindoro, Philippines; Cuming.

Conspicuously distinguished by its bright saffron-red colour and very long slender wing.

Species 58. (Mus. Cuming.)

AVICULA MARMORATA. *Avic. testā obliquè subquadratā, margaritaceā, epidermide tenui deciduā indutā, concentricè striatā, purpureo-rufa undique undato-marmoratā, intensiore rufā versus marginem, obscure pallidè radiatā, alā latiusculā.*

THE MOTTLED AVICULA. Shell obliquely somewhat square, pearly, covered with a thin deciduous epidermis, concentrically striated, mottled throughout with waved purple-red, towards the margin darker red, obscurely light-rayed, wing rather broad.

Broadly winged, of a solid pearly texture, covered with

a rather thin epidermis, painted with a mottled character, which becomes more and more obsolete towards the margin.

Species 59. (Mus. Cuming.)

AVICULA SPECTRUM. *Avic. testā perobliquā, convexiusculā, submargaritaceā, epidermide pallidè spadiceā, in striis concentricis serratis indutā, alā subproductā.*

THE GHOST AVICULA. Shell very oblique, rather convex, somewhat pearly, covered with a light-drab epidermis, arranged in concentric striæ, serrated at the edge, wing rather produced.

*Hab.* Island of Mindoro, Philippines; Cuming.

Very oblique in form, and of a pale, ghastly drab-colour.

Species 60. (Mus. Cuming.)

AVICULA FORMOSA. *Avic. testā oblongo-ovatā, convexā, solidiusculā, levigatā, intensè rufā, livido-purpureo linctā, concentricè sulcato-striatā, alā latiusculā, vix sinuatā.*

THE HANDSOME AVICULA. Shell oblong-ovate, convex, rather solid, smooth, dark-red, tinged with livid-purple, concentrically groove-striated, wing rather broad, scarcely sinuated.

*Hab.* — ?

This fine species is allied to *A. heteroptera*, but the wing is less elongated, and it differs in form.

June, 1857.

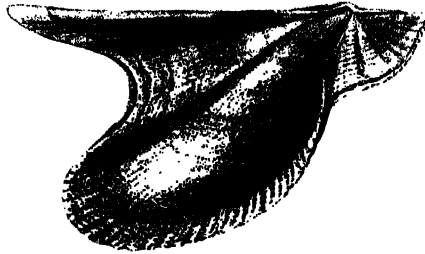








65.



66.



67.



68.



# AVICULA.

## PLATE XVI.

### Species 61. (Mus. Cuming.)

**AVICULA INQUINATA.** *Avic. testâ angustâ obliquâ, convexiusculâ, lævigatâ, viride castaneo-rufo inquinatâ, epidermide liratâ minutè serratâ versus marginem indutâ, alâ latè superficialitè r canaliculatâ.*

**THE DYED AVICULA.** Shell narrowly oblique, rather convex, smooth, stained with bright chestnut-red, covered towards the margin with a minutely-serrated ridged epidermis, wing broadly superficially channelled.

*Hab.* Singapore.

Very obliquely formed, with the wing unusually broadly superficially channelled.

### Species 62. (Mus. Cuming.)

**AVICULA EXIMIA.** *Avic. testâ angustè elongatâ, tenui, castaneo-rufâ, iridescente, epidermide minutè serratâ versus marginem indutâ, valvâ dextrâ eleganter marmoratâ et radiatâ.*

**THE DELICATE AVICULA.** Shell narrowly elongated, thin, iridescent, chestnut-red, covered towards the margin with a minutely-serrated epidermis, right valve elegantly mottled and rayed.

*Hab.* — ?

An extremely delicate elongately-winged shell, of a peculiar iridescent chestnut-colour.

### Species 63. (Mus. Cuming.)

**AVICULA GREGATA.** *Avic. testâ obliquè rotundatâ, convexâ, alâ longissimâ, gracili; pellucido-purpureo-rufâ; epidermide fibrosâ foliatâ minutè serratâ indutâ.*

**THE GREGARIOUS AVICULA.** Shell obliquely rounded, convex, with a wing very long and slender; transparent purple-red; covered with a minutely-serrated festooned fibrous epidermis.

*Hab.* Tutuilla, Samoa Islands.

A transparent purple-red shell, rather rounded and convex, with a slender elongated wing, covered with a beautifully-serrated, festooned, fibrous epidermis.

### Species 64. (Mus. Cuming.)

**AVICULA SEMI-SAGGITA.** *Avic. testâ obliquè subquadratâ,*

*convexiusculâ, cinereo-griseâ vel nigricante, purpureo undatâ, epidermide fibrosâ minutè foliatâ indutâ in liris confertis concentricis.*

**THE HALF-ARROW AVICULA.** Shell obliquely subquadrate, rather convex; ash-grey or blackish, purple waved, covered with a minutely-festooned fibrous epidermis in close-set concentric ridges.

LAMARCK, *Anim. sans vert.* vol. vii. p. 98.

*Hab.* — ?

This is the nearest to agree with Lamarck's definition of *A. semi-sagitta*. The identification is necessarily doubtful.

### Species 65. (Mus. Cuming.)

**AVICULA ARGENTEA.** *Avic. testâ suborbiculari, alâ latè productâ, solidiusculâ, argenteo-griseâ, purpureo undatâ, pallidè radiatâ, epidermide rix nullâ.*

**THE SILVERY AVICULA.** Shell suborbicular, with a broad produced wing, rather solid, silvery-grey, rippled with purple, faintly rayed, epidermis very slight.

*Hab.* — ?

Of a peculiar silvery hue, prettily rayed, with rippled purple, having white rays passing through it.

Fig. 66.

This shell has all the appearance of a distinct species, but it is entirely covered with a coating of coral.

### Species 67. (Mus. Cuming.)

**AVICULA HETEROPTERA.** *Avic. testâ obliquè orbiculari, alâ longissimâ, convexâ, lævigatâ, margaritaceâ, viridè rufo-castaneâ, obscurè angustè radiatâ, valvis inaequalibus.*

**THE DISSIMILARLY-WINGED AVICULA.** Shell obliquely orbicular, with a very long wing, convex, smooth, pearly, bright reddish-chestnut, obscurely narrowly rayed, valves unequal.

LAMARCK, *Anim. sans vert.* vol. vii. p. 98.

*Avicula sterna*, Gould.

*Hab.* New Holland.

There can be little doubt of this being the true Lamarckian *A. heteroptera*.



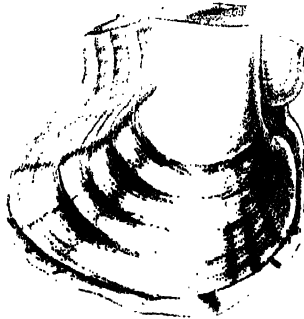




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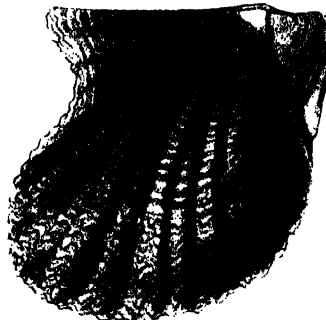
71.



72.



73.



# AVICULA.

PLATE XVII.

## Species 68. (Mus. Cuming.)

AVICULA PLACUNOIDES. *Avic. testā longitudinaliter ovalā, superne subquadratā, tenui, semipellucidā, planā, subcorneā, lutescente-albā, fasciis angustis opaco-albis nudatis radiatā, nigricante-purpureo promiscue maculatā.*

THE PLACUNA-LIKE AVICULA. Shell longitudinally ovate, somewhat square at the upper part, thin, semitransparent, flat, rather horny, yellowish-white, rayed with narrow waved opaque white bands, promiscuously blotched with blackish-purple.

*Hab.* Australia.

Remarkable for its thin *Placuna*-like structure, rayed irregularly with waved opaque bands, and promiscuously blotched with purple-black.

## Species 69. (Mus. Cuming.)

AVICULA LIBELLA. *Avic. testā oblique orbiculari, calidē convexā, alā gracili, elongatā; lutescente-corneā; epidermide serratā minutē foliatā indutā.*

THE DRAGON-FLY AVICULA. Shell obliquely orbicular, very convex, with a long slender wing; yellowish-horny; covered with an elaborately festooned serrated epidermis.

*Hab.* China Seas.

A semitransparent, horny, elongately-winged shell, most elaborately festooned with a minutely-serrated epidermis.

## Species 70. (Mus. Cuming.)

AVICULA VEXILLUM. *Avic. testā oblique quadratā, inequivalvi, pellucido-corneā, tenuissimā, strigis amplis purpureo-rufis marmoratā.*

THE FLAG AVICULA. Shell obliquely square, inequivalve, transparent horny, very thin, marbled with large purple-red streaks.

*Hab.* Ceylon (in deep water); Gardner.

A shell of very transparent substance, boldly marked with promiscuous dark stripes, destitute of any winged appendage.

## Species 71. (Mus. Cuming.)

AVICULA PIGA. *Avic. testā trigono-ovalā, crassā, convexā, levigatā, virescente-albā, radiis nigricante-purpureis irregularibus marmoratā, margine laminari, intus conspicuē picā.*

THE PIED AVICULA. Shell triangularly ovate, thick, convex, smooth, greenish-white, marbled with irregular

blackish-purple rays, margin laminar, conspicuously pied within.

GOULD, Moll. U. S. Exploring Expedition, p. 443. pl. 39. f. 599.

*Avicula maculata*, Gould.

*Hab.* Pitcairn's Island.

A species of solid structure, inlaid with an extremely delicate yellowish naere, remarkable for its prolonged laminar margin being conspicuously pied.

## Species 72. (Mus. Cuming.)

AVICULA MACRA. *Avic. testā oblique oblongā, tenui, levigatā, nitente-nigrā, albo sparsim marmoratā, epidermide deciduā minutē serratā, alā subproductā.*

THE MOOR AVICULA. Shell obliquely oblong, thin, smooth, shining-black, sparingly marbled with white, minutely-serrated deciduous epidermis, wing rather produced.

*Hab.* Sydney.

A thin, shining, jet-black shell, with a finely serrated thick-set epidermis on the ear.

## Species 73. (Mus. Cuming.)

AVICULA CORNEA. *Avic. testā oblique oblongā, coracineā, olivaceo-corneā, levigatā, alā latiusculā.*

THE HORNY AVICULA. Shell obliquely oblong, rather convex, olive, horny, smooth, wing rather broad.

*Hab.* Jamaica; Gosse.

A plain, olive, horny shell, moderately winged, attaching itself to *Gorgonia*.

## Species 74. (Mus. Cuming.)

AVICULA FUCATA. *Avic. testā longitudinaliter oblongā, subquadratā, convexā, tenuiculā, purpureo-rufo dense radiatā, laminis tenuibus planis concentricis amplius serratis obsitā.*

THE STAINED AVICULA. Shell longitudinally oblong, somewhat square, convex, rather thin, closely rayed with purple-red, beset with thin largely serrated, flat, concentric laminae.

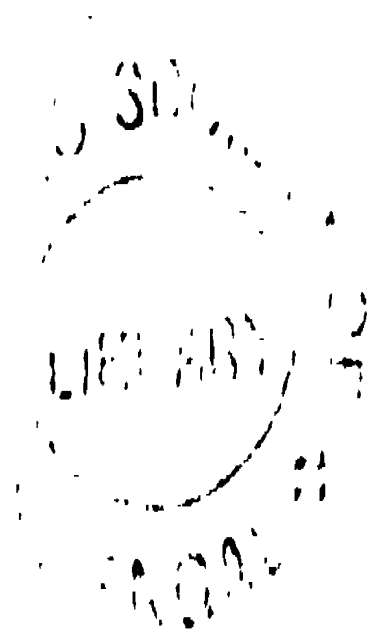
GOULD, Pro. Bost. Soc. Nat. Hist. vol. iii. p. 369: Moll. U. S. Exploring Expedition, p. 441. pl. 39. f. 551.

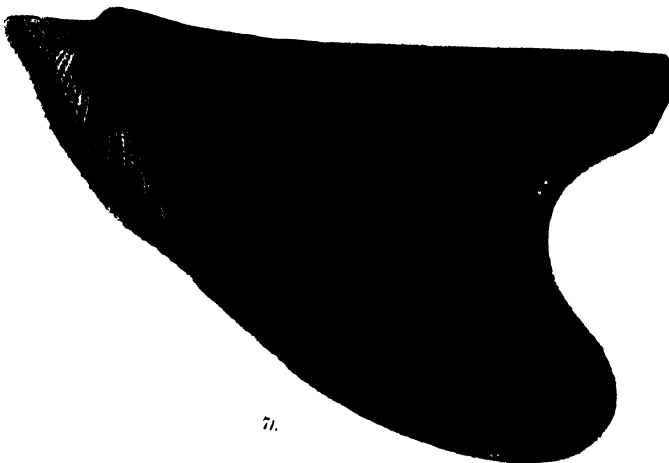
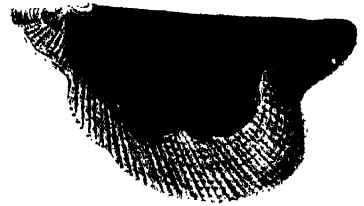
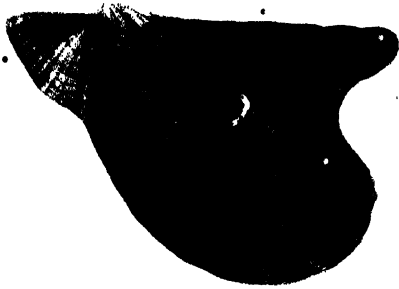
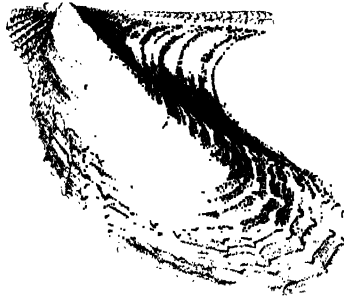
*Hab.* Japan.

Chiefly distinguished by its radiating pattern of red stains.









# • AVICULA. /

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• PLATE XVIII.

Species 72. (Fig. 68, Mus. Brit.)

AVICULA VITREA. *Avic. testā obliquè curvatā, subspatulatā, alā latè sinuatā, tenui; pellucido-albā; parum convexā, plano-squamata, squamis ferè obsolete.*

THE GLASSY AVICULA. Shell obliquely curved, somewhat spatulate, with the wing broadly sinuated, thin; transparent-white; but little convex, flatly scaled, scales almost obsolete.

*Hab.* West Indies.

Flat and transparent, of thin *Placuna*-like substance, obliquely spatulate, with a few scarcely-developed festooned scales.

Species 73. (Fig. 69, Mus. Brit.)

AVICULA ATLANTICA. *Avic. testā obliquè oratā, solidiusculā, convexā, alā sublatè sinuatā, levigatā; purpureo-fusca, fasciis angustis pallidis radiatā, fasciis maculis fuscis cuspidatis vittatis.*

THE ATLANTIC AVICULA. Shell obliquely ovate, rather solid, convex, wing rather broadly sinuated, smooth; purple-brown, rayed with light narrow bands, bands filleted with brown arrow-headed spots.

LAMARCK, Anim. sans vert. vol. vii. p. 98.

*Mytilus avicula seu hirundo*, Chemnitz.

*Hab.* Australia; Jukes.

This species has doubtless a wide range of habitation. Its most distinguishing characteristic is the rayed pattern of narrow light bands, filleted with brown arrow-headed marks.

Species 74. (Fig. 70, Mus. Brit.)

AVICULA RETICULATA. *Avic. testā trigono-oratā, alā latè sinuatā; intensè purpureo-castaneā; tenuè concentricè striatā, epidermide minutè reticulatā prope marginem indatā.*

THE RETICULATED AVICULA. Shell triangularly ovate, with the wing rather broad; dark rich purple-chestnut; finely concentrically striated, covered near the margin with minutely reticulated epidermis.

*Hab.* Australia.

Allied to *A. Uta*, but rather different in form, and of darker colour. The epidermis presents a most exquisite example of finely tufted network.

Species 75. (Fig. 71, Mus. Brit.)

AVICULA SAVIGNYI. *Avic. testā obliquè oblongā, trigonā, alā latè sinuatā; intensè purpureo-nigrā, striis elevatis concentricis reticulatim indatā.*

SAVIGNY'S AVICULA. Shell obliquely oblong, triangular, with the wing broadly sinuated; dark purple-black, covered with a concentric network of raised striae.

DESHAYES, Anim. sans vert. vol. vii. p. 102.

*Avicula heteroptera*, Sowerby, in Genera of Shells.

*Mytilus morio*; Dillwyn.

*Hab.* Pulo Condore; Mus. Brit.

A fine purple-black species, with a broad, expanded, not elongated, wing, beautifully sculptured with fine concentric striae.



# AVICULA.

	Plate.	Species.		
<i>aculeata</i> , Sowerby	XIII.	47	<i>lata</i> , Gray	IV. 5
<i>arata</i> , Reeve	X.	32	<i>lentiginosa</i> , Reeve	VI. 13
<i>ala-corvi</i> , Chemnitz	XII.	44	<i>libella</i> , Reeve	XVII. 69
<i>ala-perdici</i> , Reeve	VI.	10	<i>lingulata</i> , Deshayes	XII. 44
<i>Anglica</i> , Brown	XIII.	47	<i>lotorium</i> , Lamarck	III. 3
<i>Anomioides</i> , Reeve	IX.	26	<i>macroptera</i> , Lamarck	II. 2
<i>aquatilis</i> , Reeve	XIV.	52	<i>maculata</i> , Gould	XVII. 71
<i>argentea</i> , Reeve	XVI.	65	<i>Malleoides</i> , Reeve	XII. 46
<i>assula</i> , Reeve	XI.	40	<i>marmorata</i> , Reeve	XV. 58
<i>Atlantica</i> , Brown	XIII.	47	<i>muricata</i> , Reeve	VI. 12
<i>Atlantica</i> , Lamarck	XVIII.	73	<i>maura</i> , Reeve	XVII. 72
<i>barbata</i> , Reeve	V.	9	<i>nebulosa</i> , Conrad	X. 33
<i>castanea</i> , Reeve	XIII.	49	<i>oera</i> , Reeve	VIII. 24
<i>cetra</i> , Reeve	IX.	28	<i>perviridis</i> , Reeve	VIII. 20
<i>Chamoides</i> , Reeve	XI.	41	<i>Pernoides</i> , Reeve	XI. 39
<i>Chincensis</i> , Leach	XV.	57	<i>Peruviana</i> , Reeve	XIV. 53
<i>cornica</i> , Reeve	XVII.	73	<i>pica</i> , Gould	XVII. 71
<i>crocea</i> , Chemnitz	XV.	57	<i>Placmoides</i> , Reeve	XVII. 68
<i>Cumingii</i> , Reeve	IV.	6	<i>prætexta</i> , Reeve	VII. 15
<i>electrina</i> , Reeve	XII.	43	<i>producta</i> , Reeve	XIV. 55
<i>eximia</i> , Reeve	XVI.	62	<i>pulehella</i> , Reeve	VIII. 22
<i>falcata</i> , Lamarck	XIII.	47	<i>punctulata</i> , Reeve	XII. 42
<i>fibrosa</i> , Reeve	XIV.	50	<i>radula</i> , Reeve	VIII. 23
<i>fimbriata</i> , Reeve	IX.	25	<i>reticulata</i> , Reeve	XVIII. 74
<i>flabellum</i> , Reeve	V.	7	<i>rutila</i> , Reeve	VIII. 19
<i>flammata</i> , Reeve	XI.	37	<i>Savignyi</i> , Deshayes	XVIII. 75
<i>flexuosa</i> , Reeve	IV.	4	<i>scabriuscula</i> , Reeve	XIV. 54
<i>formosa</i> , Reeve	XV.	60	<i>sculpta</i> , Reeve	XI. 38
<i>fucata</i> , Gould	XVII.	74	<i>semi-sagitta</i> , Lamarck	XVI. 64
<i>gregata</i> , Reeve	XVI.	63	<i>signata</i> , Reeve	XIV. 56
<i>heteroptera</i> , Lamarck	XVI.	67	<i>smaragdina</i> , Reeve	XII. 45
<i>heteroptera</i> , Sowerby	XVIII.	75	<i>spectrum</i> , Reeve	XV. 59
<i>hirundo</i> , Turton	XIII.	47	<i>sterna</i> , Gould	XVI. 67
<i>hystrix</i> , Reeve	VIII.	18	<i>sugillata</i> , Reeve	IX. 27
<i>imbricata</i> , Reeve	VI.	11	<i>Tarentina</i> , Lamarck	XIII. 47
<i>inquinata</i> , Reeve	XVI.	61	<i>tegulata</i> , Reeve	VII. 17
<i>iridescens</i> , Reeve	XIII.	48	<i>trochilus</i> , Reeve	XIV. 51
<i>irradians</i> , Reeve	X.	35	<i>vexillum</i> , Reeve	XVII. 70
<i>irrasa</i> , Reeve	X.	30	<i>vitrea</i> , Reeve	XVIII. 72
<i>lacunata</i> , Reeve	X.	29	<i>zebra</i> , Reeve	XI. 36









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